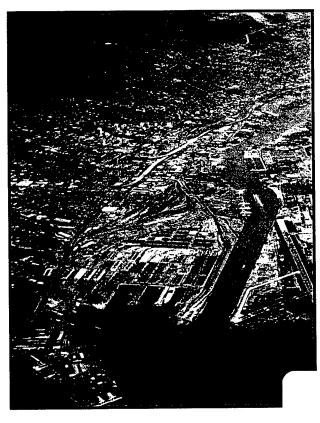
Disposal and Reuse of Fleet and Industrial Supply Center, Oakland Vision 2000 Maritime Development

Final Environmental Impact Statement/ Environmental Impact Report

SCH #96062010



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Volume II

July 1997

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FLEET AND INDUSTRIAL SUPPLY CENTER, OAKLAND and PORT OF OAKLAND, CALIFORNIA

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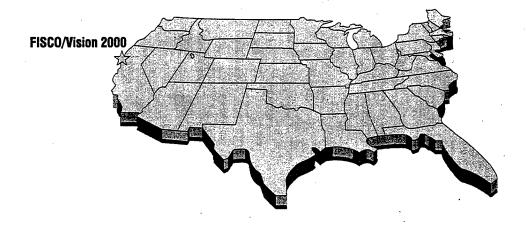
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APPENDIX A: Visual Resources on Site

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Photo 3 FISCO Officer's Housing Area

Photo 4 Older Buildings in the Southern Pacific Yard

Older Transmission Line Structures in the Southern Pacific Yard Photo 5

Outer Harbor Marine Terminal Area (seen from ferry) Photo 6

View from Port View Park Towards FISCO Wharves Photo 7

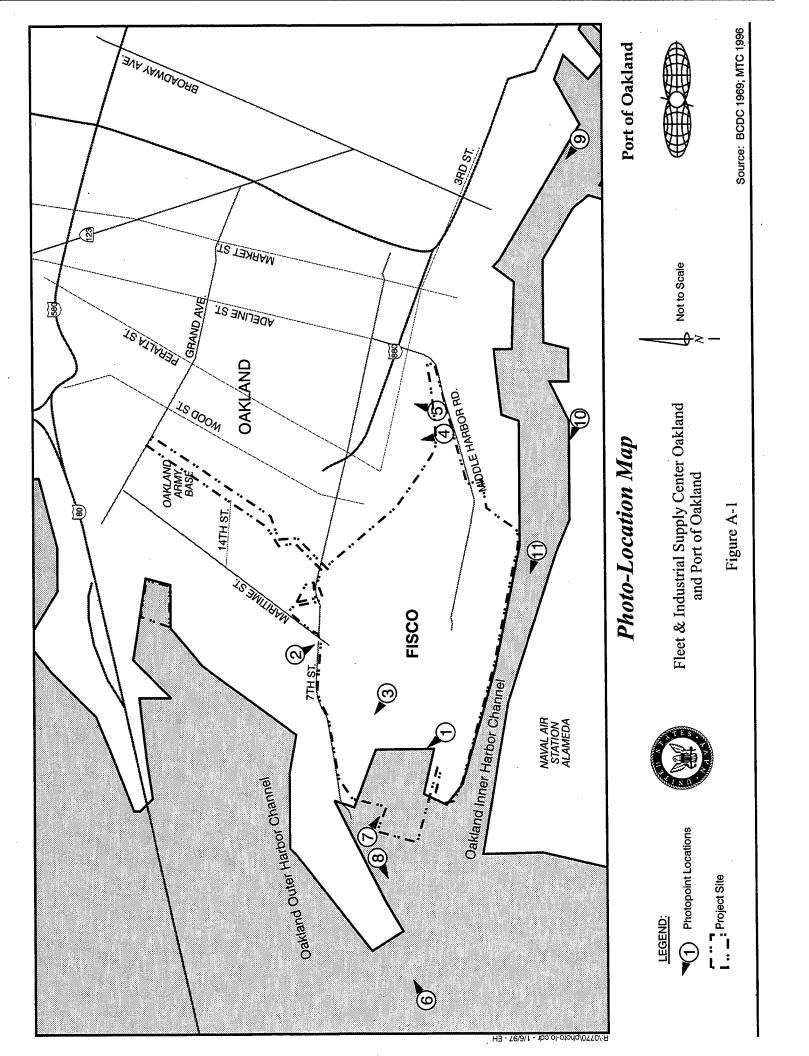
View from Port View Park Towards San Francisco Photo 8

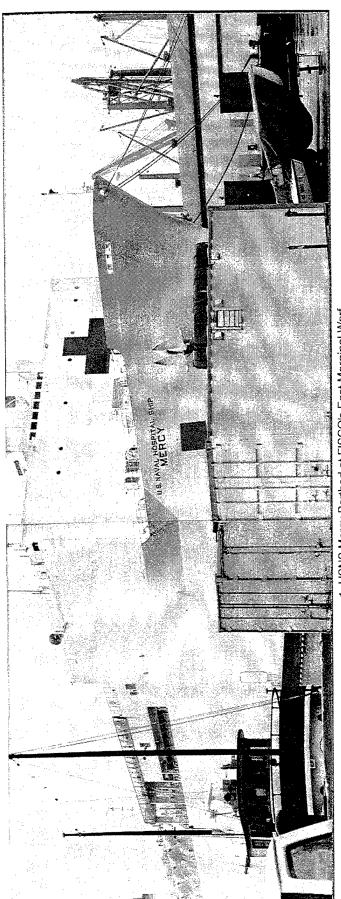
Photo 9 View from Jack London Village

Photo 10 View from Alameda Shoreline

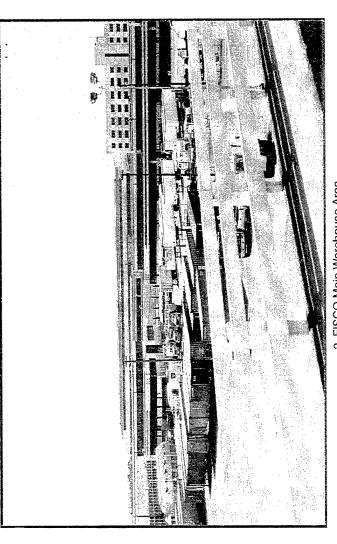
Photo 11 Panoramic View of San Francisco and Bay Bridge (seen from Oakland)

July 1997





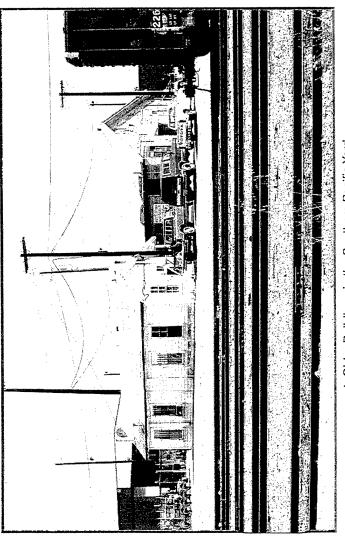
1. USNS Mercy Berthed at FISCO's East Marginal Warf



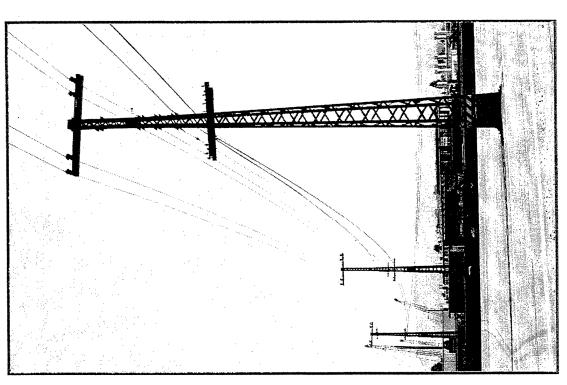
2. FISCO Main Warehouse Area



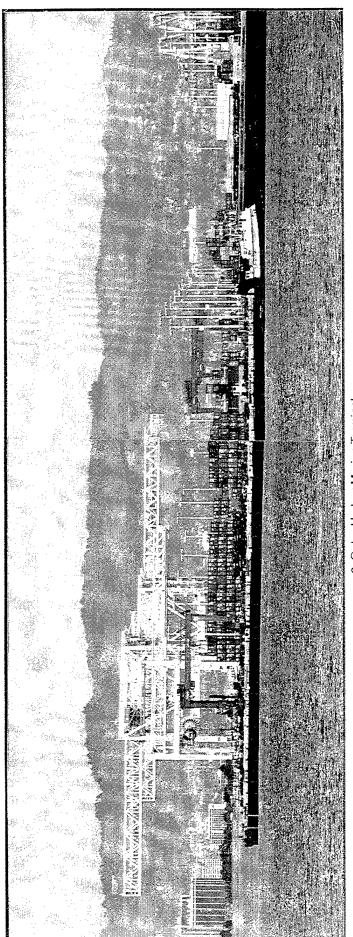
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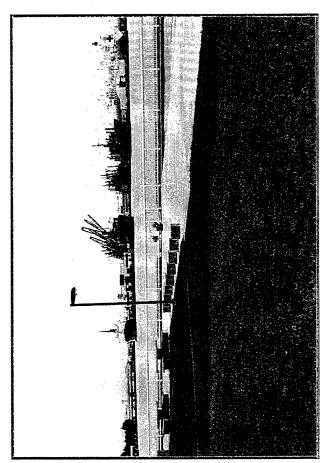
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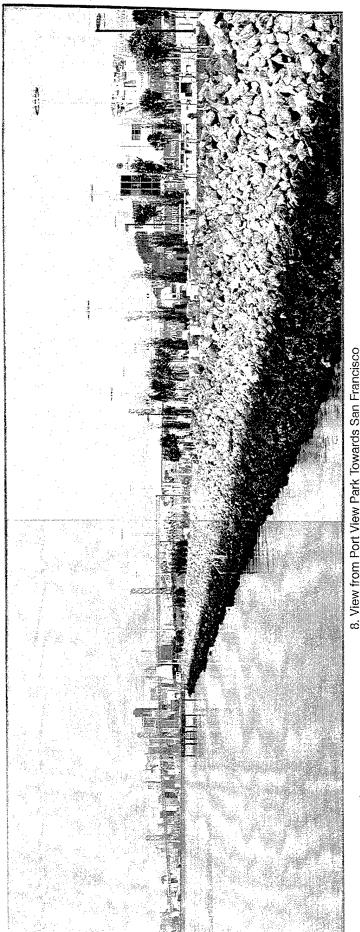
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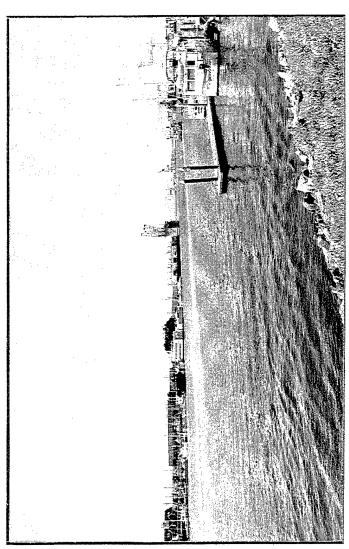
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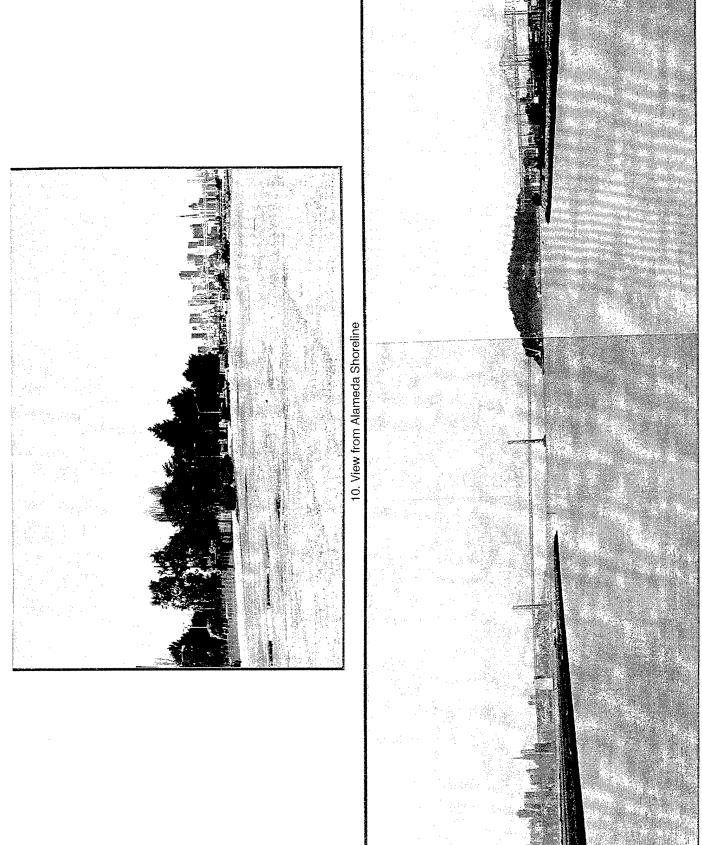
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8. View from Port View Park Towards San Francisco



9. View from Jack London Village



11. Panaromic View of San Francisco and Bay Bridge (seen from Oakland)

Appendix B **Special Legislation Relating to FISCO**

B.1. DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION FINDINGS AND RECOMMENDATIONS

The Secretary of Defense, in compliance with Public Law 101-510, as amended, officially transmitted his recommendations for base closures and realignments to the Defense Base Closure and Realignment Commission on February 28, 1995. The Commission held 13 investigation hearings, conducted 206 factfinding visits to 167 military installations and activities, held 16 regional hearings nationwide, listened to hundreds of Members of Congress, and received hundreds of thousands of letters from concerned citizens from across the country. By June 22, 1995, the Defense Base Closure and Realignment Commission had completed its review and analysis of the Secretary's recommendations, and began its final, two days of deliberations, all in public.

Information on the Commission's base closure and realignment decision for the Fleet and Industrial Supply Center, Oakland is presented below. The paragraph entitled "Secretary of Defense Recommendations" was taken verbatim from the Department of Defense Base Closure and Realignment Report dated March 1995. The paragraph entitled "Community Concerns" provide a brief summary of arguments presented to the Commission by local communities; they are not all-inclusive.

Fleet and Industrial Supply Center, Oakland, California

Category:

Fleet and Industrial Supply Centers

Mission:

Supply Support

One-time Cost:

\$23.0 million

Savings:

1996-2001: \$29.7 million

Annual:

\$12.6 million

Return on Investment: 1999 (Immediate)

FINAL ACTION:

Close

Secretary of Defense Recommendation

None. The Commission added this military installation to the list of bases to be considered by the Commission for closure or realignment as a proposed change to the list of recommendations submitted by the Secretary of Defense.

Community Concerns

FISC is located in three jurisdictions: Oakland, Alameda, and Richmond, California. Alameda and Richmond would like to have the land in their cities closed under base closure rules, which would expedite the land transfer. Initially, Oakland was concerned that any base closure action would prevent implementation of special legislation authorizing the Secretary of the Navy to sign long-term leases with the City of Oakland, the Port of Oakland, and the City of Alameda for \$1. The Port of Oakland and the Navy recently signed leases for two parcels of FISC land. The Port was originally concerned that closure of FISC as a BRAC action would delay their large port development plan. The Port recognized that closure would allow the Port to acquire the land and would not interfere or prevent ongoing lease negotiations.

Commission Findings

The Secretary of the Navy removed FISC Oakland from the list of recommendations presented to him because of excessive job losses in California. The Commission added FISC Oakland for consideration. The Commission found employment levels and workload at FISC decreasing as the bases it supported were closed. FISC's primary function would be to operate office space for Government tenants.

The Commission agreed with the Richmond and Alameda communities that the closure of FISC land in their communities would facilitate transfer to the land. To clarify that these were distinct parcels of land the Commission addressed these parcels in a separate closure motion. The Commission and the Oakland community ultimately agreed that the closure of the main FISC compound in Oakland would not interfere with their ongoing lease negotiations or previously signed leases, and would facilitate transfer of the property. The proposed closure actions received the endorsement of the Port of Oakland and the mayors of Oakland, Alameda, and Richmond. The Commission also found that additional savings would result if the two major tenants at FISC, Military Sealift Command and Defense Finance and Accounting Service, move to other Government-owned space.

Commission Recommendation

The Commission finds the Secretary of Defense deviated substantially from final criteria 5 and 6. Therefore, the Commission recommends the following: realign the Fleet and Industrial Supply Center, Oakland. Close Point Molate Naval Refueling Station, Richmond, California. Close Navy Supply Annex, Alameda, California. The Commission finds this recommendation is consistent with the force-structure plan and final criteria.

Commission Recommendation II

The Commission finds the Secretary of Defense deviated substantially from final criteria 5 and 6. Therefore, the Commission recommends the following: close the Fleet and Industrial Supply Center, Oakland. Relocate Defense Finance and Accounting Service and Military Sealift Command to Government-owned space. The Commission finds this recommendation is consistent with the force-structure plan and final criteria.

B.2. P.L. 102-484 SEC. 2834 (OCTOBER 23, 1992)

SEC. 2834. LEASES OF PROPERTY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA.

- (a) LEASE AUTHORIZED WITH UNION PACIFIC RAILROAD COMPANY—
 - (1) The Secretary of the Navy may lease to the Union Pacific Railroad Company (in this subsection referred to as the "Company") not more than 15 acres of real property, together with improvements thereon, located at the Naval Supply Center, Oakland, California.

- (2) The lease authorized in paragraph (1) shall—
 - (A) be for an initial period of not more than 25 years;
 - (B) contain an option for the Company to extend the lease for an additional period of not more than 25 years; and
 - (C) contain the restriction that the Company use the leased property only for freight transportation purposes.
- (3) (A) As consideration for the lease of the real property under paragraph (1), the Company—
 - (i) shall pay to the Navy the long-term fair market rental value of the leased property; and
 - (ii) may be required to furnish additional consideration as provided in subparagraph (B).
 - (B) The Secretary may require that the lease include a provision for the Company—
 - (i) to pay the Navy an amount (as determined by the Secretary) for the costs of replacing at the Naval Supply Center, Oakland, California, the facilities vacated by the Navy on the leased property or to construct the replacement facilities for the Navy; and
 - (ii) to pay the Navy an amount (as so determined) for the costs of relocating Navy operations from the vacated facilities ties to the replacement facilities.
- (4) (A) Section 2667(d) of the title 20, United States Code, shall apply to amounts paid under paragraph (3)(A)(i).
 - (B) The Secretary may use amounts received under paragraph (3)(B) to pay for constructing new facilities, or making modifications to existing facilities, that are necessary to replace facilities vacated by the Navy on the leased property and for relocating operations of the Navy from the vacated facilities to the replacement facilities.
- (5) The Secretary may authorize the Company to demolish existing facilities on the leased property and, consistent with the restriction required by paragraph (2)(C), construct new facilities on the property for the use of the Company.
 - (b) LEASE AUTHORIZED WITH CITY OR PORT OF OAKLAND—
 - (1) The Secretary of the Navy may lease to the City of Oakland, California, or the Port of Oakland, California (in this subsection referred to as the "City" and the "Port", respectively), not more than 195 acres of real property, together with improvements thereon, located at the Naval Supply Center, Oakland, California.
 - (2) The lease authorized under paragraph (1) shall—
 - (A) be for a term of not more than 50 years; and
 - (B) shall contain the restriction that the City or the Port (as the case may be) use the leased property in a manner consistent with Navy operations conducted at the Naval Supply Center.
 - (3) (A) As consideration for the lease of the real property under paragraph (1), the City or the Port (as the case may be)—
 - (i) shall pay to the Navy the long-term fair market rental value of the leased property; and
 - (ii) may be required to furnish additional consideration as provided in subparagraph (B).
 - (B) The Secretary may require that the lease include a provision for the City or the Port (as the case may be)—
 - to pay the Navy an amount (as determined by the Secretary) for the costs of replacing at the Naval Supply Center, Oakland, California, the facilities vacated by the Navy on the leased property or to construct the replacement facilities for the Navy; and
 - (ii) to pay the Navy an amount (as so determined) for the costs of relocating Navy operations from the vacated facilities to the replacement facilities.

- (4) The Secretary may not enter into the lease authorized by paragraph (1) until 21 days after the date on which the Secretary submits to the Committees on Armed Services of the Senate and House of Representatives a report containing an explanation of the terms of the proposed lease and a description of the consideration that the Secretary expects to receive under the lease.
- (5) (A) The Secretary may use amounts paid under paragraph (3)(A)(i) to pay for improvement, maintenance, repair, construction, or restoration activities at the Naval Supply Center, Oakland, California.
 - (B) The Secretary may use amounts received under paragraph (3)(B) to pay for constructing new facilities, or making modifications to existing facilities, that are necessary to replace facilities vacated by the Navy on the leased property and for relocating operations of the Navy from the vacated facilities to the replacement facilities.
- (6) The Secretary may authorize the City or the Port (as the case may be) to demolish existing facilities on the leased property and, consistent with the restriction required by paragraph (2)(B), construct new facilities on the property for the use of the City or the Port.
 - (c) ADDITIONAL TERMS.— The Secretary may require such additional terms and conditions in connection with the leases authorized under this section as the Secretary considers appropriate to protect the interests of the United States.
 - (d) REPEAL OF SUPERSEDED AUTHORITY.— Section 2338 of the National Defense Authorization Act for Fiscal Years 1988 and 1989 (Public Law 100-180; 101 Stat. 1225) is repealed.

B.3. P.L. 103-160 SEC. 2833 (NOVEMBER 30, 1993)

SEC. 2833. MODIFICATION OF LEASE AUTHORITY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA

- (a) EXPANSION OF LEASE AUTHORITY.— Paragraph (1) of subsection (b) of section 2834 of the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614) is amended by striking out "not more than 195 acres of real property" and all that follows through the period and inserting in lieu thereof "those portions of the Naval Supply Center, Oakland, California, that the Secretary determines to be available for lease."
- (b) CONSIDERATION.—Paragraph (2) of such subsection is amended—
 - (1) by striking out "and" at the end of subparagraph (A);
 - (2) by striking out the period at the end of subparagraph (B) and inserting in lieu thereof"; and"; and
 - (3) by adding at the end the following new subparagraph: "(C) be for nominal consideration.".
- (c) CONFORMING AMENDMENTS.— Such subsection is further amended—
 - (1) in paragraph (2)(B), by striking out "shall";
 - (2) by striking out paragraphs (3), (4), and (5); and
 - (3) by redesigning paragraph (6) as paragraph (3).

B.4. P.L. 103-337 SEC. 2821 (OCTOBER 5, 1994)

SEC. 2821. ADDITIONAL LESSEE OF PROPERTY AT NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA.

Section 3834(b) the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614) is amended—

- (1) in paragraph (1)—
 - (A) by striking out "City" the second place it appears and inserting in lieu thereof "Cities"; and
 - (B) by inserting "the City of Alameda, California," after "California," the first place it appears; and
- (2) in paragraphs (2) and (3), by striking out "City" each place it appears and inserting in lieu thereof "Cities."

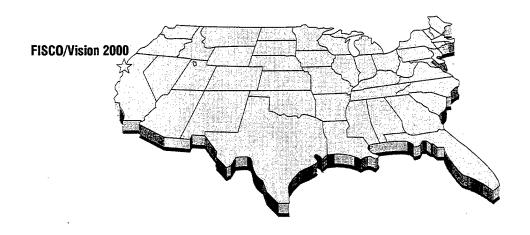
B.5. P.L. 104-106 SEC. 2867 (FEBRUARY 10, 1996)

SEC. 2867. LAND CONVEYANCE ALTERNATIVE TO EXISTING LEASE AUTHORITY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA

Section 2834(b) of the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614), as amended by section 2833 of the Military Construction Authorization Act for Fiscal Year 1994 (division B of Public Law 103-160; 107 Stat. 1896) and section 2821 of the Military Construction Authorization Act for Fiscal Year 1995 (division B of Public Law 103-337; 108 Stat. 3057), is further amended by adding at the end the following new paragraphs:

- "(4) In lieu of entering into a lease under paragraph (1), or in place of an existing lease under that paragraph, the Secretary may convey, without consideration, the property described in that paragraph to the City of Oakland, California, the Port of Oakland, California, the City of Alameda, California, or the City of Richmond, California, under such terms and conditions as the Secretary considers appropriate.
- "(5) The exact acreage and legal description of any property conveyed under paragraph (4) shall be determined by a survey satisfactory to the Secretary. The cost of each survey shall be borne by the recipient of the property."

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APPENDIX C FINAL SECTION 4(f) EVALUATION/ BCDC BAY PLAN POLICIES

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Appendix C Final Section 4(f) Evaluation/ BCDC Bay Plan Policies

C.1 Final Section 4(f) Evaluation

INTRODUCTION

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that "[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that "[t]he Secretary of [Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area refuge, or site) only if:

- (1) there is no prudent and feasible alternative to using that land; and
- (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

In general, a section 4(f) "use" occurs with a Department of Transportation-approved project or program when (1) section 4(f) land is permanently incorporated into a transportation facility; (2) when there is a temporary occupancy of section 4(f) land that is adverse in terms of the section 4(f) preservationist purposes as determined by specified criteria (23 CFR 771.135 [p] [7]); and (3) when section 4(f) land is not incorporated into the transportation project, but the project's proximity impacts are so severe that the protected

activities, features, or attributes that qualify a resource for protection under section 4(f) are substantially impaired (constructive use).

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs that use lands protected by section 4(f).

The FHWA will use this section 4(f) evaluation in their decision-making process for granting Intermodal Surface Transportation Efficiency Act (ISTEA) project funding for the Port's Vision 2000 Program for constructing a joint intermodal terminal (JIT). The FHWA and the Port have consulted with the public agencies having jurisdiction over the 4(f) resources in the project area during the assessment of impacts and the development of measures to minimize harm.

PROPOSED ACTION

In response to the recognized need to increase capacity and to improve efficiency of integrated intermodal cargo transportation services, the Port of Oakland has developed the Vision 2000 Program. This program is a schedule of phased improvements and development projects to modernize and expand the Port's facilities. The Vision 2000 Program involves reuse and development of the US Navy's Fleet and Industrial Supply Center Oakland (FISCO), formerly known as the Naval Supply Center, located in West Oakland, as well as 290 acres beyond the FISCO property boundaries.

Chapter 1, Purpose and Need, Section 1.3, pages 1-3 and 1-6 in Volume I of this EIS/EIR explains the applicable conditions affecting ownership of the FISCO property. In summary, as a result of this project, a portion of FISCO may be conveyed in fee to the Port through special legislation, allowing the Secretary of the Navy to convey the nonreversionary portion of FISCO to the Port. The remainder of FISCO may be conveyed by a reversionary clause in the deed of trust for FISCO. Pending final closure of FISCO, the Port is leasing portions of FISCO from the Navy. Chapter 2, Section 2.2.5, pages 2-10 and 2-12, describes the various geographic components that comprise the Port's Vision 2000 Program.

The Vision 2000 Program consists of three common elements: JIT, marine terminals, and public waterfront access and marine habitat enhancement (see Chapter 2, Section 2.2.3, Common Elements of Port Reuse Alternatives, pages 2-5 and 2-6 in Volume I). The environmental consequences associated with full buildout of all three Vision 2000 elements by 2010 are evaluated in Chapter 5 of Volume I.

The following four Vision 2000 Program alternatives are evaluated in Volume I:

• Maximum Marine/Maximum Rail;

- Minimum Marine/Minimum Rail;
- Maximum Marine/Minimum Rail; and
- Reduced Harbor Fill (Preferred Alternative).

These four alternatives represent variations on the design and configuration of the Vision 2000 Program components, including the JIT. Table 2-3 in Volume I of this EIS/EIR provides an overview of facilities and other operations features of the four JIT alternatives. These four alternatives were configured to represent a range of potential impacts to different resources. For example, rail track storage on the Oakland Army Base property is included for only one of the four alternatives. Similarly, although both the Maximum Marine/Maximum Rail and Reduced Harbor Fill Alternatives would serve both Southern Pacific/Union Pacific and Burlington Northern-Santa Fe railroads, the Reduced Harbor Fill Alternative is configured in a manner that avoids impacts to one of the historic districts in the project area.

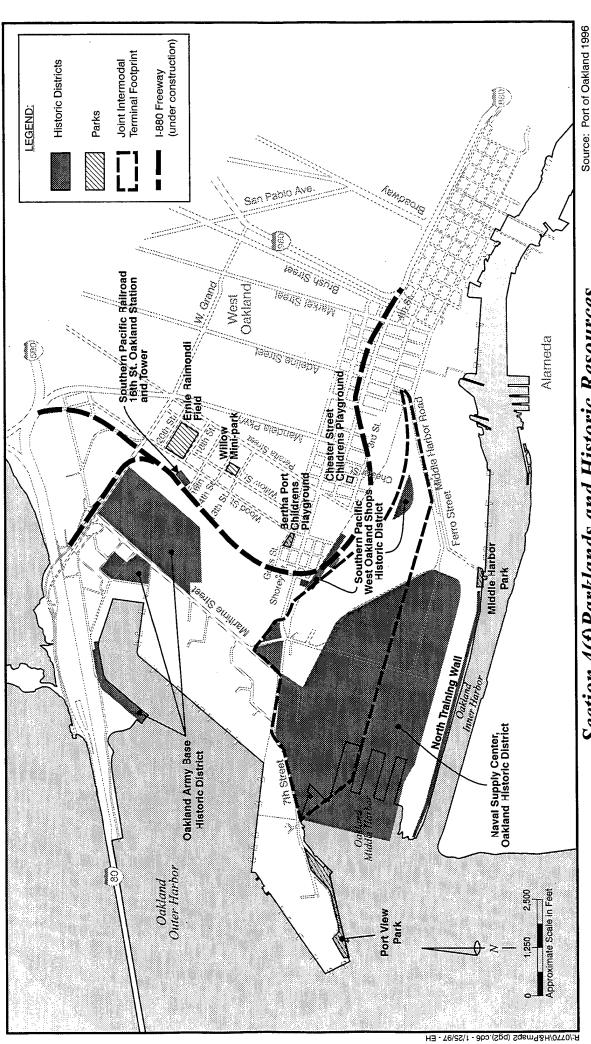
A detailed discussion of the reasons why the four Vision 2000 Program alternatives were selected is described in Chapter 2, Alternatives, Including the Proposed Action, Section 2.2.2, pages 2-3 and 2-5 in Volume I of this EIS/EIR. The maximum JIT footprints proposed under these four alternatives are presented on Figures C-1, C-2, C-3, and C-4. The Port's preferred alternative is the Reduced Harbor Fill Alternative.

The purpose of the JIT is to expand and improve the existing intermodal operations of the Southern Pacific and Union Pacific Railroads in Oakland, California, and to provide access for the international segment of the Burlington Northern-Santa Fe Railroad business currently handled in Richmond, California, approximately 17.7 km (11 miles) north of the Port area. All three Vision 2000 elements are separate and independent of one another. Therefore, because the JIT would provide efficient rail access to existing Port terminals in the Oakland Inner and Outer Harbors, its successful implementation does not depend on construction and operation of the new marine terminals proposed as part of the Vision 2000 Program.

The Metropolitan Transportation Commission (MTC) has authorized ISTEA funding for the JIT. To prepare the property after acquisition, a large number of structures must be demolished, utilities relocated and constructed, grading undertaken, and several roadways constructed. The MTC has authorized funds placed in the State Transportation Improvement Program (TIP) through ISTEA for seven million dollars for JIT construction.

SECTION 4(F) PROPERTY

The only section 4(f) resource used by the preferred Reduced Harbor Fill Alternative is the Naval Supply Center, Oakland (NSCO) Historic District.





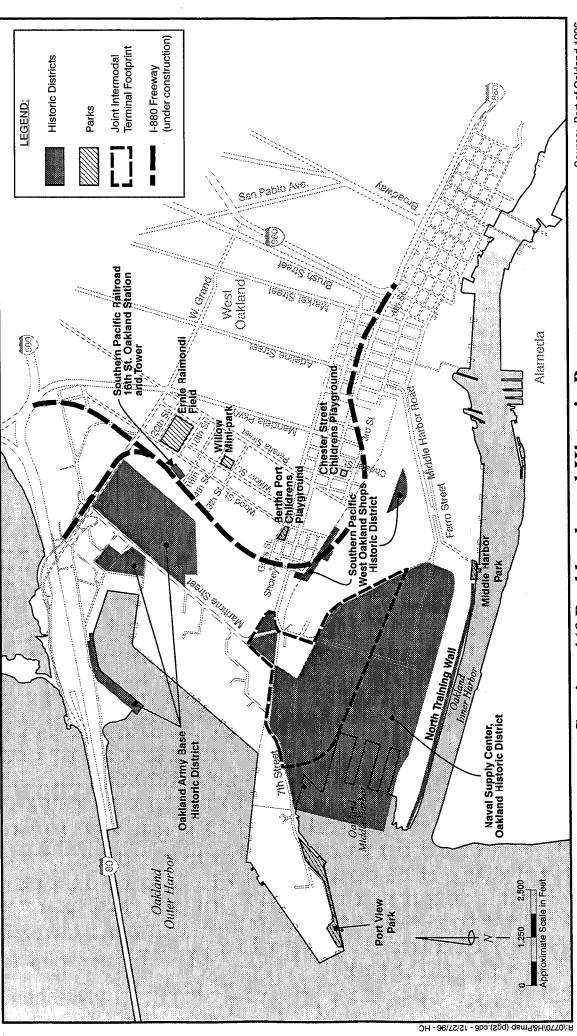
Fleet & Industrial Supply Center Oakland

Port of Oakland



and Port of Oakland





Section 4(f) Parklands and Historic Resources Minimum Marine/Minimum Rail Alternative

Source: Port of Oakland 1996

Port of Oakland



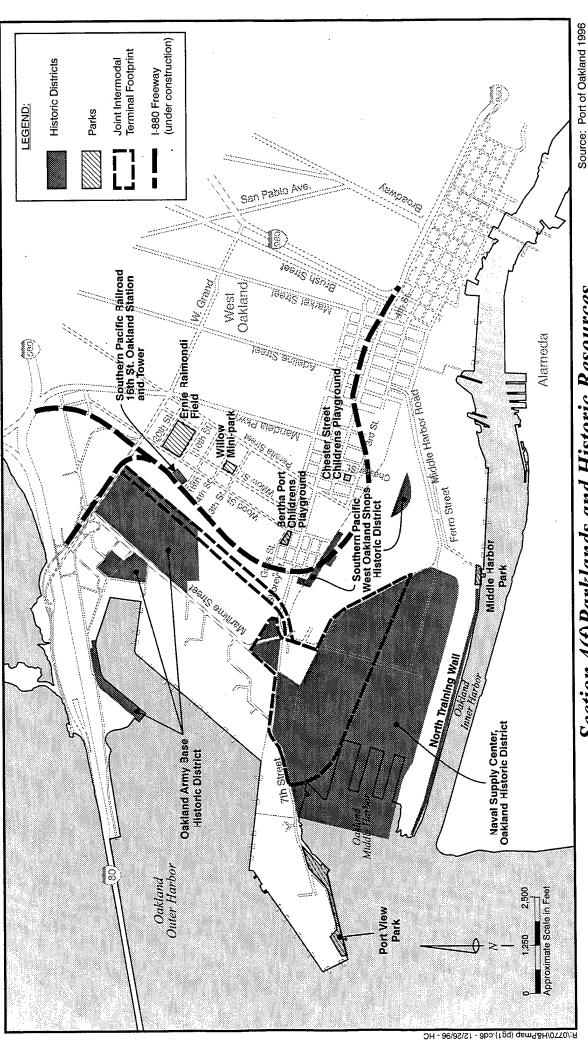
Fleet & Industrial Supply Center Oakland

and Port of Oakland

Figure C-2



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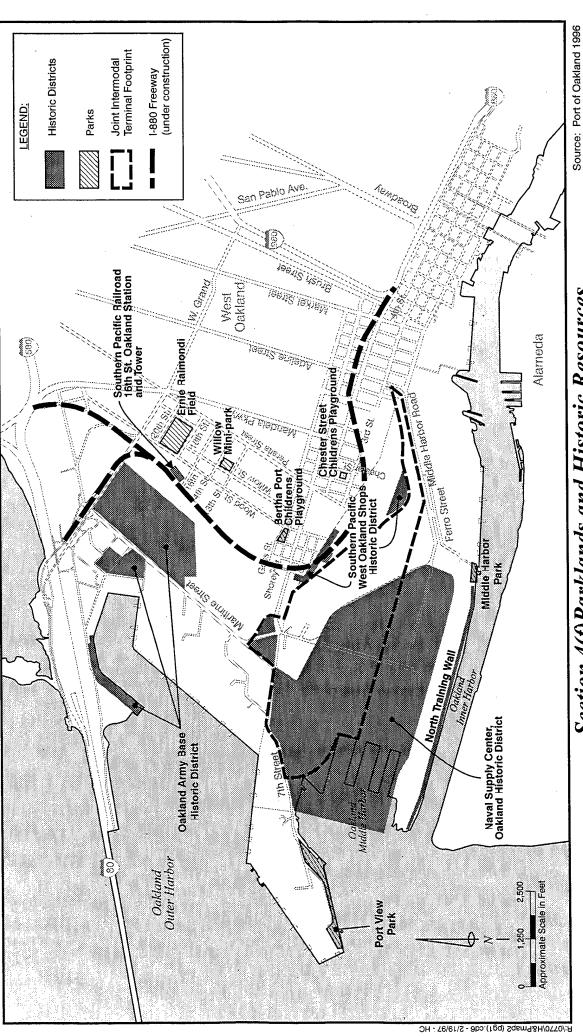




Fleet & Industrial Supply Center Oakland and Port of Oakland







Section 4(f)Parklands and Historic Resources Reduced Harbor Fill Alternative

Fleet & Industrial Supply Center Oakland and Port of Oakland





However, the descriptions of other section 4(f) properties that would be used by the other reuse alternatives are included in the following section for information.

There are three historic districts in the project area that are eligible for the National Register of Historic Places (NRHP): the NSCO, Oakland Army Base, and Southern Pacific West Oakland Shops Historic Districts (see Figures C-1, C-2, C-3, and C-4). In 1990, the State Historic Preservation Officer (SHPO) concurred that these three districts are eligible for the NRHP (see Section 3.4 in Volume 1). However, documentation has been undertaken to demonstrate that the Southern Pacific West Oakland Shops Historic District is no longer eligible for inclusion in the NRHP.

There are no known prehistoric or historic archaeological sites identified on FISCO property or in the project area. Because of past dredging and filling, the probability of encountering any subsurface archaeological resources on FISCO or in the project vicinity is very low.

Naval Supply Center, Oakland Historic District

The NSCO is owned by the US Navy and is approximately 214 ha (528 acres). The NSCO is located in West Oakland, approximately 3.2 km (two miles) west of the Oakland central business district, on the eastern shoreline of San Francisco Bay. The boundaries of this historic district are shown on Figures C-1, C-2, C-3, and C-4.

The Navy constructed NSCO in 1940 to provide logistical support for military activities in the Pacific region during World War II. Land use at FISCO has been characterized by extensive military support facilities, including warehouses, office buildings, some military housing, and the Middle Harbor berths and wharf area. Approximately 89.1 ha (220 acres) of the FISCO property are leased to the Port of Oakland for use as general transportation support activities, including warehousing, container depot activities, loading, and container cargo stations.

In 1990, the NSCO Historic District included 84 buildings and structures that contributed to the significance of the historic district and 42 noncontributing buildings and structures within the mapped boundaries. The list of contributing buildings and structures that existed at FISCO in 1990 are identified in Table 3-6, Section 3.4, page 3-32 in Volume I of this EIS/EIR.

Access to the NSCO Historic District is via two gates. Gate 1 is at the northern end of the historic district. From Gate 1, a bridge structure carries traffic across 7th Street to an at-grade intersection with 3rd Street. Gate 2 is at the eastern end of the historic district off of Middle Harbor Road and provides access to a perimeter road that runs roughly parallel to Middle Harbor Road for approximately one mile.

In 1996, approximately 2,600 Navy personnel were employed at the NSCO Historic District. An additional 400 employees that represent tenants of the Port

work at the Harbor Transportation Center, located in the eastern half of the site on property leased by the Port.

Oakland Army Base Historic District

The Oakland Army Base Historic District is owned by the US Army. The northwest and northeast sections of this historic district are approximately 6.3 ha (15.5) and 15.9 ha (39.5 acres), respectively. The northwest section is comprised of two discontinuous segments; the first segment (4.05 ha [10 acres]) is at the northern edge of the Oakland Outer Harbor, and the second segment is west of Maritime Street and south of Alaska Street. The northeast section of this historic district is between Maritime Street and the Southern Pacific Desert Yard south of West Grand Avenue. The boundaries for the Oakland Army Base Historic District are shown on Figures C-1, C-2, C-3, and C-4.

Twenty-four buildings and structures at the Oakland Army Base have been determined eligible for listing in the NRHP these are identified by building number in Table 3-7, Section 3.4, page 3-35 in Volume I of this EIS/EIR. The contributing buildings in the first segment of the northwest section are made up of three wharves and a shed, while the contributing buildings in the second segment are primarily storehouses and administrative buildings. Contributing buildings in the northeast section are primarily large warehouses and a switch engine building at the Knight Yard.

The main access to the Oakland Army Base Historic District is Maritime Street. Access to the wharves in the northwest section of the base is via Burma Road off Maritime Street. There are 19 active Department of Defense or federal agencies as tenants and five nonmilitary agency tenants on the Oakland Army Base as of July 5, 1996.

Southern Pacific West Oakland Shops Historic District

The Southern Pacific West Oakland Shops Historic District is owned by the Southern Pacific Railroad. This historic district includes two separate segments within the larger Southern Pacific West Oakland Railyard. The northern segment, approximately one ha (2.5 acres), is at the northern extreme of the Southern Pacific Railyard, from west of Bay Street to east of Wood Street. The southern segment, approximately 1.4 ha (3.5 acres), is separated from the northern segment by a bank of railroad tracks.

This historic district includes 14 buildings, 12 of which were identified as contributors, eight in the northern segment near Wood Street and four in the southern segment. The eligible buildings within this district are listed in Table 3-8, Section 3.4, on page 3-37 in Volume I of this EIS/EIR. These buildings include a telephone exchange, electrical shop, signal tower, lumber shed, freight depot, and mill.

Caltrans and Southern Pacific Railroad as part of the Cypress Freeway reconstruction in the early 1990s demolished four buildings within the northern segment of this historic district. A 1991 MOA between the Federal Highway Administration, Department of the Army, SHPO, and the Advisory Council on Historic Preservation (ACHP) called for recordation of these four buildings to the standards of the Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) prior to demolition, as well as attempts to market the buildings for relocation off-site. The marketing attempts were unsuccessful and the buildings were recorded and demolished. The four demolished buildings were located in the northern segment near Wood Street; this demolition removed half of the contributing buildings in that area.

Subsequent to these demolition activities, there was no determination if whether the integrity of the original historic district remained. Documentation has been undertaken to demonstrate that the qualities and characteristics that originally rendered this property a historic district were destroyed when the "core" district (i.e., buildings in the northern segment) were demolished; therefore, the remaining ancillary buildings in the southern segment of this district would no longer be eligible for inclusion in the NRHP. The Port is submitting documentation to the SHPO requesting concurrence that the Southern Pacific West Oakland Shops Historic District is no longer eligible for listing on the NRHP.

IMPACTS ON SECTION 4(F) PROPERTIES

The only section 4(f) resource used by the preferred Reduced Harbor Fill. Alternative is the NSCO Historic District. However, the impacts on other section 4(f) properties that would be used by the other reuse alternatives are included in the following section for information.

All four project alternatives would involve further demolition of the NSCO Historic District. The Reduced Harbor Fill Alternative, the Preferred Alternative, would only have a direct impact on the NSCO District. The Maximum Marine/Minimum Rail Alternative would result in demolition in a portion of the Oakland Army Base Historic District and the Maximum Marine/Maximum Rail Alternative would result in demolition in a portion of the Southern Pacific West Oakland Shops Historic District.

NSCO Historic District

All four project alternatives would adversely effect the NRHP-eligible NSCO Historic District because an undertaking is considered to have an adverse impact when the effect on a historic property may diminish the integrity of that resource. The transfer, lease, or sale of a property from federal ownership without adequate restrictions or deed covenants to ensure preservation would be an adverse effect. This impact would apply to all FISCO contributing buildings and structures within the NRHP-eligible NSCO Historic District.

Under any of the four project alternatives, the Port would demolish all or nearly all contributing buildings within the NSCO Historic District. All historic buildings would be demolished under the Preferred Alternative. This demolition will complete a program that began in 1994, through which much of the NSCO Historic District would be demolished to make way for expansion of the Port.

In 1994, the Navy, the Port, the SHPO, and the ACHP executed a Memorandum of Agreement (MOA) pertaining to leasing up to approximately 89 ha (220 acres) of the 214-ha (528-acre) FISCO to the Port. The MOA accepted demolition of any buildings within 77 ha (190 acres) of the 89-ha (220-acre) existing lease area (see Appendix G in EIS/EIR Volume II, Exhibit 1).

The MOA called for mitigation measures, including recording selected buildings to HABS standards, preparing a Historic and Archeological Resources Protection (HARP) plan for the remainder of the base, and other mitigation measures. Some of these measures were implemented. Other measures, however, were interrupted by the decision in 1995 to close the base. The demolition accepted under the 1994 MOA will effectively destroy much of the NSCO Historic District by demolishing 39 of the 84 contributing buildings.

Under all four project alternatives, JIT construction would demolish most if not all of the remaining contributing buildings and would result in an adverse effect and a substantial adverse change to this historic property. However, as part of an April 1997 amended Memorandum of Agreement (MOA) for protecting historic resources at the NSCO Historic District, three existing officers quarters will be available for moving off-site. These quarters could also be relocated adjacent to and west of the JIT in a proposed public access area around the Oakland Middle Harbor under the Maximum Marine/Maximum Rail and Maximum Marine/Minimum Rail Alternatives (see Figures 2-4 and 2-8 in Chapter 2, Volume I).

Oakland Army Base Historic District

The Preferred Alternative would not have an adverse effect on the Oakland Army Base Historic District. Only the Maximum Marine/Minimum Rail Alternative would result in a direct use and adverse effect to the Oakland Army Base Historic District in two respects. First, it would expand the proposed rail terminal into the Oakland Army Base Knight Yard, a contributing element of the district. Second, it would demolish or modify a number of on-site buildings. Demolition would occur in the northeast section of the historic district. Plans do not allow for precise identification of the number of contributing buildings that could be demolished, but it appears that up to seven large warehouse buildings could be demolished under this scenario. Other non-historic buildings may be demolished as well. Therefore, the Maximum Marine/Minimum Rail Alternative would result in an adverse effect and a substantial adverse change to this historic property. The other three JIT alternatives would not have a direct use of the Oakland Army Base.

Access

Access to the Oakland Army Base Historic District would not be substantially affected by JIT operations. According to the Vision 2000 traffic analysis, level of service at intersections in the vicinity of the Oakland Army Base (Maritime/Burma, Maritime/West Grand, and Maritime/14th) would not be adversely affected as a result of the project under any of the four reuse alternatives (of which the JIT represents only a fraction of total development). Therefore, access to this historic district would not be substantially restricted (see Tables 5-7 and 5-8 on pages 5-55 and 5-56, Tables 5-13 and 5-14 on pages 5-93 and 5-94, Tables 5-15 and 5-16 on pages 5-115 and 5-116, and Tables 5-17 and 5-18 on pages 5-137 and 5-138 in Volume I). Measures will be implemented to control traffic during JIT construction (see Measures to Minimize Harm).

Noise

The Oakland Army Base Historic District is not a noise-sensitive area and is subject to high ambient noise levels from existing rail operations in the Oakland Army Base Knight Yard and adjacent Southern Pacific Desert Yard and nearby truck traffic. Therefore, future JIT-induced noise under any of the four alternatives is not anticipated to substantially impair the use or enjoyment of this district. Construction noise would be temporary in duration and would similarly not adversely effect public enjoyment of this 4(f) resource.

Air Quality

As described above, future carbon monoxide emissions would fall within the range of what has been historically recorded in the project area and would not substantially impair the use or enjoyment of the Oakland Army Base Historic District. In addition, projected increases in ozone precursor emissions under all four reuse alternatives would not restrict use or enjoyment of this district because it is located in an area already characterized by degraded air quality.

All four project alternatives would require demolishing existing FISCO structures; this activity would be a temporary source of fugitive dust and construction vehicle emissions. However, when properly controlled through best management practices, dust emissions would not substantially impair the use or enjoyment of the Oakland Army Base Historic District because it is located more than one-half mile from FISCO, where major demolition activities would occur.

Visual

Visual resources were qualitatively evaluated by assessing the nature and extent of change in existing landscape character. Demolishing buildings and multi-story warehouses in the NSCO Historic District under all four project alternatives would have a long-term visual change to users at the Oakland Army Base Historic District. Demolition would remove existing historic buildings and would create more expansive viewing opportunities to the west/southwest towards the Oakland Middle Harbor (which will be developed for public access and marine habitat enhancement under the Vision 2000 Program). Short-term building

demolition activities may result in temporary visual impacts; however, given the industrial nature of the existing FISCO site and surrounding project area, any visual intrusion would not interfere substantially with use of nearby 4(f) resources.

Under the Maximum Marine/Minimum Rail Alternative, proposed railcar storage on the Oakland Army Base Knight Yard would not have a noticeable or intrusive visual effect because the Knight Yard and adjacent Southern Pacific Desert Yard provide similar uses.

Wildlife, Vegetation, and Water Quality

The Oakland Army Base Historic District is located in a disturbed, developed area that support limited wildlife, vegetation, and water resources. These resources are not important factors at this historic district.

Southern Pacific West Oakland Shops Historic District

The Preferred Alternative would not have an adverse effect on the Southern Pacific West Oakland Shops Historic District. Only the Maximum Marine/Maximum Rail Alternative would result in a direct use and adverse effect to four buildings in the Southern Pacific West Oakland Shops Historic District. Demolition of the four buildings would occur in the southern subdistrict of this historic district. Reassessing the eligibility of this historic district for listing in the National Register is ongoing. The Port is submitting documentation to the SHPO requesting concurrence that the Southern Pacific West Oakland Shops Historic District is no longer eligible for listing on the NRHP. The other three JIT alternatives would not have a direct use of the Southern Pacific West Oakland Shops Historic District.

Access

The Southern Pacific West Oakland Shops Historic District is currently not accessible to the public. Similar to what is described for the Oakland Army Base, private access to this historic district would not be substantially restricted during JIT operations. During JIT construction, access could be temporarily affected by increased truck traffic along Middle Harbor Road. However, measures outlined under Measures to Minimize Harm would be undertaken to preserve access to this 4(f) resource during construction.

Noise

The Southern Pacific West Oakland Shops Historic District is not a noise-sensitive area and is subject to high noise levels from existing rail operations in the Southern Pacific Rail Yard. Therefore, future JIT-induced noise is not anticipated to substantially impair the use or enjoyment of this district.

Air Quality

As described above, future carbon monoxide emissions during JIT operations would fall within the range of what has been historically recorded in the project

area and would not substantially impair the use or enjoyment of this district. Furthermore, ozone precursor emissions under all four JIT alternatives would not adversely effect this district because it is located in an area already characterized by degraded air quality. Dust emissions during buildings demolition activities would be properly controlled by best management practices.

Visual

The buildings in the southern segment of this historic district are located in an existing heavily industrial area and subsequent JIT development would not impair or degrade the visual integrity of this historic district.

Wildlife, Vegetation, and Water Quality

The Southern Pacific West Oakland Shops Historic District is located in a disturbed, developed area that supports limited wildlife, vegetation, and water resources. These resources are not important factors in this historic district.

ALTERNATIVES

The first step under section 4(f) is to determine which alternatives are feasible and prudent. An alternative may be rejected as not being feasible and prudent for any of the following reasons:

- Not meeting the project purpose and need;
- Excessive cost of construction;
- Severe operational or safety problems;
- Unacceptable adverse social, economic, or environmental impacts;
- Serious community disruption; or
- An accumulation of a lesser magnitude of the foregoing types of factors.

Harm to a section 4(f) resource should not be included in those factors which are considered in determining whether an alternative is feasible and prudent. When sufficient analysis has been completed to demonstrate that a particular alternative is not feasible and prudent, no additional analysis or consideration of that alternative is required.

After eliminating the alternatives that are not feasible and prudent, a determination must be made on whether one or more of the remaining alternatives avoids the use of land from section 4(f) resources. If such avoidance alternatives exist, one of them must be selected. However, if all of the remaining feasible and prudent alternatives use land from section 4(f) resources, then a least harm analysis must be performed to determine which alternative does the least

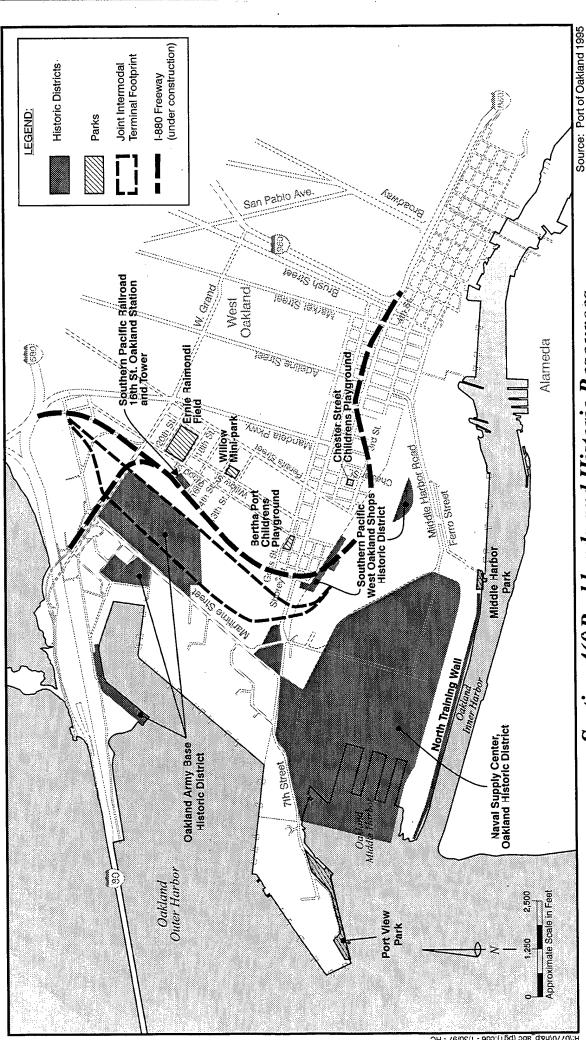
overall harm to section 4(f) resources. Where there is little or no difference in the overall harm to the section 4(f) resources, any of the alternatives may be selected.

FISCO is within the Port jurisdiction and is designated as a port priority use area in the April 1996 San Francisco BCDC and MTC Seaport Plan Update. Port priority use areas include marine terminals and directly related ancillary activities, such as container freight stations, as well as support transportation uses, including trucking and railroad yards. The location of the four Vision 2000 project alternatives evaluated in this EIS/EIR was based largely on the requirements for efficient maritime cargo transportation operations, including providing for enhanced joint intermodal rail terminal capability. This issue is further discussed in Volume I, Chapter 2, pages 2-3 and 2-5 of this EIS/EIR. Developing a JIT consistent with the Seaport Plan Update's port priority use designation restricts the range of alternatives that are feasible for evaluation. The FISCO site provides the most readily available and underused acreage of significant size in the Port area for developing the JIT.

In considering alternatives that do not use the FISCO property, the Port identified the eastern portion of the Oakland Army Base, located north of FISCO, referred to as Footprint Alternative A (Figure C-5). Approximately 200 acres in the eastern half of the Army base, along the western edge of the Southern Pacific's Desert Yard, extending from 7th Street north to the I-80/I-580 distribution structure, initially were considered as a potential location for the JIT. This location would provide good rail access and would leave all of FISCO available for marine terminal development. However, Footprint Alternative A was determined to be infeasible as an alternative site because the base is not within the Port's jurisdiction and the proposed rail terminal footprint would not meet the project's optimum engineering criteria. For example, this site would be too small and too short to accommodate expected train volumes and track lengths. In addition, the Grand Avenue viaduct would bisect the terminal footprint and, therefore, would cause potential overhead clearance problems.

The Port evaluated two additional JIT footprints on FISCO and Southern Pacific Railyard property during preliminary JIT studies. Footprint Alternative B encompasses Southern Pacific's entire existing intermodal facility plus the eastern portion of FISCO (Figure C-6). This footprint would leave most of FISCO available for marine terminal use. This alternative would have good mainline rail access, but it lacked loading tracks of sufficient length. The loading track curvature within the facility would not meet Southern Pacific and Union Pacific requirements and the facility size would be too small to handle optimum JIT volumes.

Footprint Alternative C consists of a strip of tracks running east-west and covering the Southern Pacific's intermodal facility and the center of the FISCO property (Figure C-7). This footprint would allow design of a "single-ended" facility that maximizes track lengths and minimizes track curvature. However,



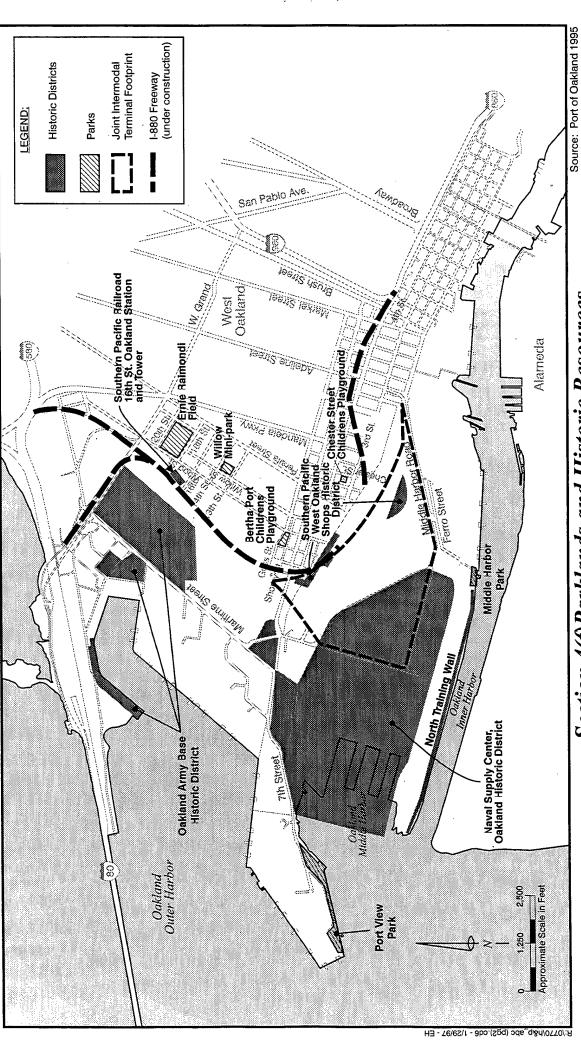


Fleet & Industrial Supply Center Oakland and Port of Oakland









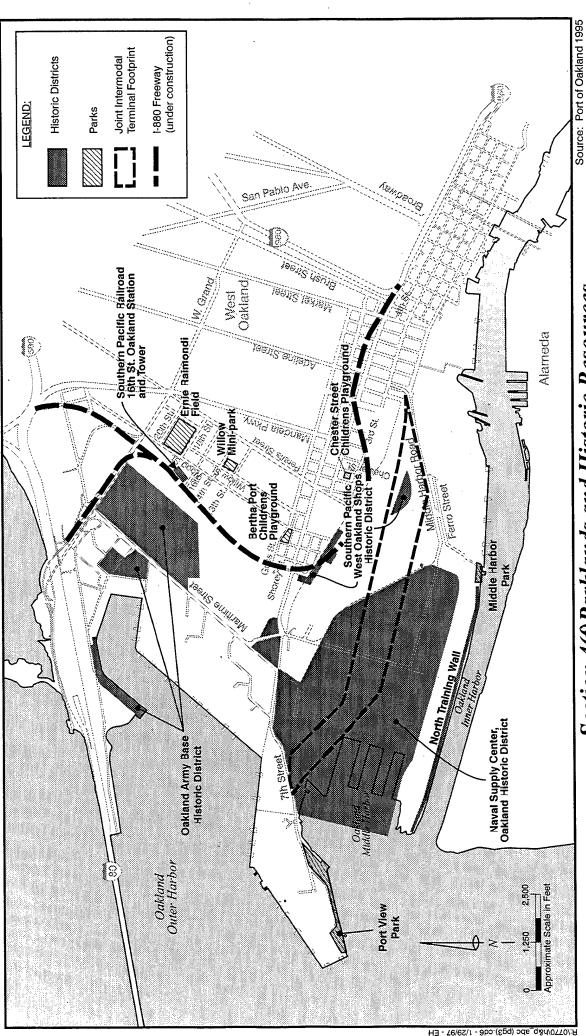
Section 4(f)Parklands and Historic Resources JIT Footprint B

Fleet & Industrial Supply Center Oakland and Port of Oakland











Fleet & Industrial Supply Center Oakland and Port of Oakland

Port of Oakland





Table C-1
Alternatives Considered for Section 4(f) Resources

Alternative	Feasible and Prudent	Uses Section 4(f) Land	Relative Net Harm to Section 4(f) Land After Mitigation
Footprint Alternative A	No	Yes (NA)	NA
Footprint Alternative B	No	Yes (NA)	NA
Footprint Alternative C	No	Yes (NA)	NA
Maximum Marine/ Maximum Rail Alternative	Yes	Yes	Greater
Minimum Marine/ Minimum Rail Alternative	Yes	Yes	Lesser
Maximum Marine/ Minimum Rail Alternative	Yes	Yes	Greater
Reduced Harbor Fill Alternative	Yes	Yes	Lesser

NA: Since this alternative is not feasible and prudent, it should be eliminated from further consideration. Whether section 4(f) land is used and the relative harm to section 4(f) protected properties are no longer relevant factors.

because this layout allows train access from only one end of the facility (as opposed to a double-ended facility that relieves congestion by providing twice as many ways to enter, exit, and switch in the yard), this alternative footprint was determined to make rail operations relatively difficult.

Table C-1 illustrates the alternative selection process described above. Footprint Alternatives A, B, and C were determined not to be feasible and prudent because they did not fully meet the project purpose and need and were problematic from an operations stand point. A section 4(f) evaluation is not necessary for these alternatives and no further analysis is warranted.

The remaining four project alternatives were determined to be feasible and prudent in terms of meeting the project's purpose and need as well as the project's engineering and design criteria. However, each of these four alternatives would result in a "direct use" of the NSCO Historic District. In addition, the Maximum Marine/Minimum Rail Alternative would directly use a portion of the Oakland Army Base Historic District and the Maximum Marine/Maximum Rail Alternative would directly use a portion of the Southern Pacific West Oakland Shops Historic District. Therefore, the Minimum Marine/Minimum Rail and Reduced Harbor Fill Alternatives were determined to have the least overall harm

to section 4(f) historic resources. The Port's preferred alternative is the Reduced Harbor Fill Alternative.

None of these remaining project alternatives could avoid each and every 4(f) resource in the project area while meeting the minimum size thresholds needed for cargo handling and transfer needed to reasonably develop a JIT. There are no other appropriate locations in the Bay Area that would be suitable for the proposed JIT. The proposed project location is situated close to the Oakland Inner Harbor Channel, the only deep-draft navigation channel within the Port jurisdiction that can provide marine access to a joint intermodal facility. In addition, the proposed JIT location is ideally situated close to existing rail and highway infrastructure that will expedite the transport of cargo between vessels, trains, and trucks for efficient distribution of goods.

To avoid all section 4(f) resources, the Port would have to develop the JIT on other property within or beyond its jurisdiction. Although there may be other land available that would not directly effect 4(f) resources, use of other property away from the FISCO property could involve additional impacts that would not support the project's purpose and need to increase operating rail efficiency. For example, JIT construction at another location may not be within close proximity to existing rail corridors, therefore increasing the drayage distance to transport cargo that in turn would result in traffic and air quality impacts. In addition, unlike the FISCO site, other project locations may not be specified as a port priority use pursuant to the April 1996 San Francisco Bay Conservation and Development Commission and Metropolitan Transportation Commission Seaport Plan Update.

One nearby site that is designated for port priority use is 220 acres in the northwestern corner of Alameda Island along the southern edge of the Oakland Inner Harbor. However this site, part of Naval Air Station (NAS) Alameda, contains potential 4(f) resources, including a historic wall along the Inner Harbor shoreline and habitat for the endangered California least tern. Furthermore, although marine vessels can access this site via the Inner Harbor, there are no linkages to existing rail corridors. To implement a JIT on this site, rail tracks would have to be constructed either under or across the Oakland Inner Harbor to connect to existing Union Pacific/Southern Pacific rail lines. This type of activity would result in significant traffic and air quality impacts.

If there is an available alternative site adjacent to the bay that avoids all section 4(f) resources, it would likely require the need to construct and/or relocate rail corridors and/or deep-draft marine terminals. This site would not be efficient for Port operations because it would be isolated from existing Port facilities and other necessary infrastructure required to operate a JIT and would result in much greater physical impacts compared to the proposed project. Therefore, project alternatives have been limited to variations of JIT designs that maximize use of FISCO rather than other locations on non-FISCO property.

Consultation pursuant to Section 106 of the National Historic Preservation Act regarding Port demolition in the NSCO Historic District was conducted in 1994. This consultation process concluded with the signing of an MOA that authorized demolition of buildings and structures located on about one-half of the eligible NSCO Historic District. Since the MOA was executed, thirteen contributing buildings have been demolished and another 29 are scheduled for demolition by September 1998. This work will occur with or without use of the ISTEA funds. The NSCO Historic District has suffered a substantial loss of integrity through demolitions already accomplished and will suffer much greater loss of integrity through demolitions approved but not yet accomplished in the 1994 MOA.

MEASURES TO MINIMIZE HARM

In April 1997, the Navy, Port, SHPO, and ACHP signed an amendment to the 1994 MOA that allows for demolition of buildings on the remainder of the NSCO Historic District. This amended MOA includes mitigation measures that take into account the larger areas of impacts associated with Navy disposal of all of FISCO. These mitigation measures are summarized in Section 4.1.4.2, Impact 1, on pages 4-9 and 4-10 and Section 5.1.4.2, Impact 1, pages 5-15 and 5-16 in Volume I of this EIS/EIR and are included in the amended historic mitigation plan in Appendix G in Volume II of this EIS/EIR.

To minimize some potential short-term impacts during JIT construction, the following measures will be incorporated into the project:

- Coordinating vehicle routes and construction activities with local authorities to ensure neighborhood safety and to minimize traffic, dust, and noise impacts;
- Adding traffic controls where construction traffic enters major streets; and
- Applying best management practices to suppress dust (see Sections 4.1.10.2 and 5.1.10.2, Mitigation 2, for a specific list of potential dust control measures during construction).

OTHER PARK, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES EVALUATED RELATIVE TO THE REQUIREMENTS OF SECTION 4(F)

The purpose of this discussion is to address section 4(f) requirements relative to other park, recreational facilities, wildlife refuges, and historical properties in the project vicinity. As indicated below, none of the alternatives under consideration result in a section 4(f) use of these other park, recreational, wildlife refuges, or historical resources. The discussion of each resource either documents (1) why the resource is not protected by the provisions in section 4(f) or (2) if it is protected by the provisions of section 4(f), why none of the alternatives under consideration cause a section 4(f) use by (a) permanently incorporating land into the project, (b)

by temporarily occupying land that is adverse to the preservationist purposes of section 4(f), or (c) by constructively using land from the resource.

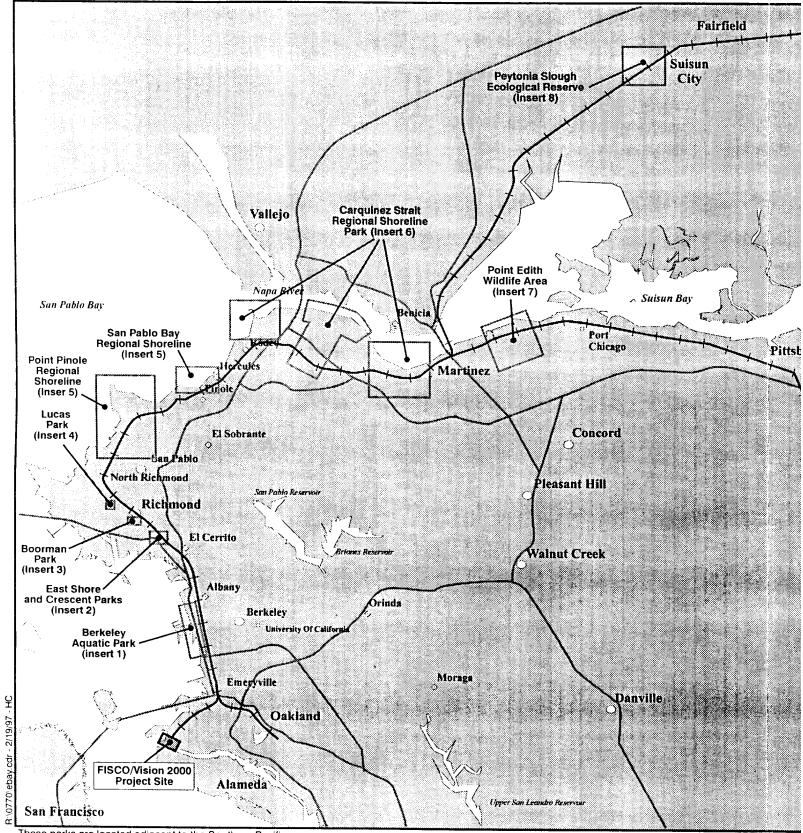
Two regions of influence (ROIs) were used to identify other park, recreational facilities, wildlife refuges, and historic properties potentially affected by the project alternatives. An ROI is a geographic area in which impacts for a particular resource would likely occur. The first ROI, in the vicinity of the JIT, encompasses the area within a 0.8 kilometer (km) (one-half mile) radius of the JIT. Six parksites and two historic properties located within this ROI are evaluated below and are identified on Figures C-1, C-2, C-3, and C-4: Port View Park, Middle Harbor Park, Ernie Raimondi Field, Willow Mini-park, the Bertha Port and Chester Street Playgrounds, a structure referred to as the north training wall, and the Southern Pacific Railroad Oakland 16th Street Station and 16th Street Tower. The San Francisco Bay Trail, shown on EIS/EIR Figure 3-5 on page 3-11, is also evaluated below.

The second ROI is the 228.6 meter (m) (750-foot) band along the Southern Pacific mainline tracks (north to the Solano County/Sacramento County border and east to the Contra Costa/San Joaquin County border) that could be affected by increased regional rail service resulting from JIT operations. Eight parks, one wildlife area, and one ecological reserve are within this ROI: Aquatic Park, East Shore Park, Crescent Park, Boorman Park, Lucas Park, Point Pinole Regional Shoreline, San Pablo Bay Regional Park, Carquinez Strait Regional Shoreline Park, Point Edith Wildlife Area, and Peytonia Slough Ecological Reserve. The locations of these resources are depicted on Figures C-8 and C-9; however, as the only potential section 4(f) project issues associated with these sites would be noise and air pollutant emissions, they have not been described in detail below.

DESCRIPTION OF OTHER PARKS, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES

Port View Park

Port View Park is approximately 1.6 hectare (ha) (four acres) and is owned by the Port of Oakland. This park is located on the southeast side of 7th Street, near the Seventh Street Marine Container Terminal in West Oakland. Facilities provided at this park include a fishing pier, snack bar and bait shop, restrooms, playground, picnic tables, barbecues, outdoor sculpture, and an enclosed two-story viewing area. Popular activities at this park are picnicking and fishing. Pedestrian and vehicular access to Port View Park is via 7th Street. Middle Harbor Park, located about 2.9 km (1.8 miles) to the southeast, provides the only other public fishing pier and shoreline access to the bay.



These parks are located adjacent to the Southern Pacific mainline tracks north and east of the project site.

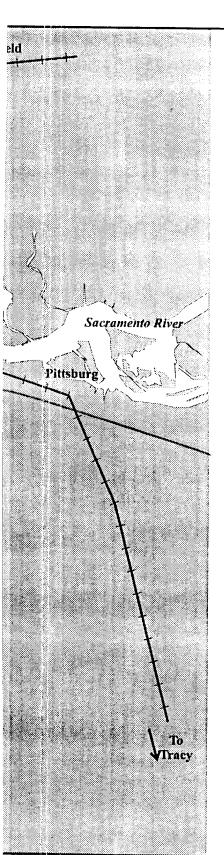
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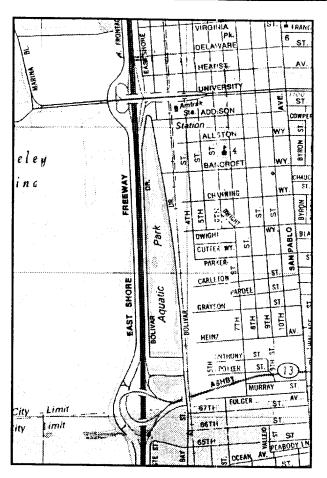
Approximate Scale in Feet

Section 4(f) Resources Alor Pacific Mainline C

Fleet & Industrial Supply Cer and Port of Oaklar

Figure C-8

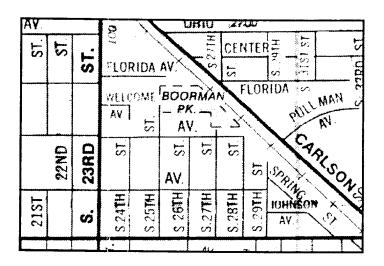




POTRERO OF SCHOOL SCHOO

Insert 2: East Shore and Crescent Parks

Insert 1: Aquatic Park



Insert 3: Boorman Park

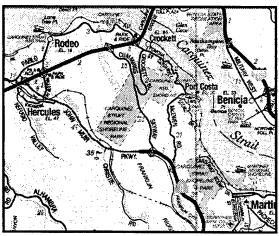
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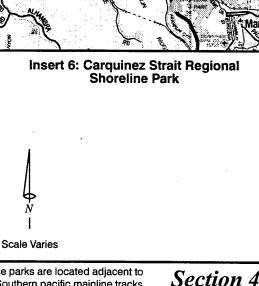
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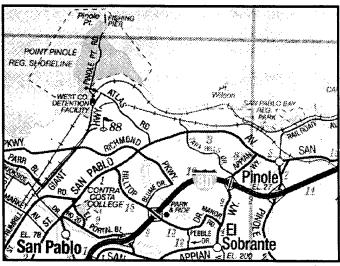
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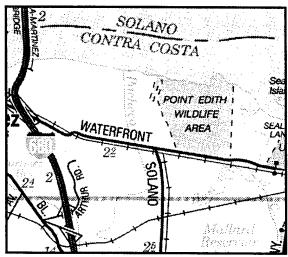
Insert 4: Lucas Park



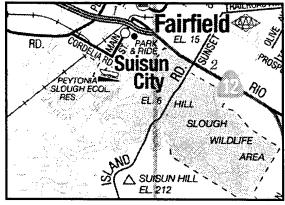




Insert 5: Pinole Point Regional Shoreline and San Pablo Bay Regional Park



Insert 7: Point Edith Wildlife Area



Insert 8: Peytonia Slough Ecological Reserve

These parks are located adjacent to the Southern pacific mainline tracks north and east of the project site.

Section 4(f) Resources Along the Southern Pacific Mainline Corridor

Fleet & Industrial Supply Center Oakland and Port of Oakland

Figure C-9





Middle Harbor Park

Middle Harbor Park is an approximate 0.4-ha (one-acre) park owned by the Port of Oakland and located along the Oakland Inner Harbor between the Middle Harbor Terminal and the Union Pacific Intermodal Railyard. Facilities at Middle Harbor Park include picnic tables, benches, and a fishing pier. Visitors use this park for eating lunch and fishing. Vehicular and pedestrian access to this park is from Ferro Street via Middle Harbor Road. This access route passes through a heavily industrialized part of the Port area.

Ernie Raimondi Field

Ernie Raimondi Field is owned by the City of Oakland and is approximately 4.05 ha (10 acres). This field is located in West Oakland, west of I-880, and is bordered by 20th Street to the northeast, Campbell Street to the southeast, 18th Street to the southwest, and Wood Street to the northwest. Ernie Raimondi Field has one baseball diamond and two soccer fields. The field is used primarily for baseball/softball games and soccer matches. Street parking is available for vehicles, and pedestrian access is from the surrounding four streets.

During the weekends, it is estimated that between 300 and 400 people use this field. During the weekday, data on usage is derived from records of permitted activities. There are about 50 to 75 daily permitted users between the hours of 3:30 PM to sunset (Morgan, R., October 28, 1996, personal communication). Ernie Raimondi Field is the only park in the vicinity that provides active recreational fields for sports such as baseball and soccer.

Willow Mini-park

Willow Mini-park is owned by the City of Oakland and is approximately 0.36 ha (0.9 acre). This park is located in West Oakland, west of I-880, and is bordered by Willow Street to the northwest, 13th Street to the southwest, and 14th Street to the northeast. Facilities at this Mini-park include picnic areas (four tables), a half-size basketball court, restrooms, and a tool shed. Recreation activities at this Mini-park include picnicking, basketball, barbecuing, and checkers. Principal vehicular access is via Willow Street. Approximately 50 or fewer people use the Willow Mini-park daily (Gullet, D., November 5, 1996, personal communication). This park has experienced problems with litter and is viewed as a potential location for illegal drug activities (Morgan, R., November 5, 1996, personal communication). Chester Street Playground, located about 1.04 km (0.65 miles) to the southeast, also provides a half-size basketball court to this neighborhood.

Bertha Port Playground

Bertha Port Playground is owned by the City of Oakland and is approximately 0.1-ha (one-quarter acre). This playground is located in West Oakland, west of I-880, and is bordered by Shorey Street to the east, Wood Street to the south, and Goss Street to the west. Approximately 0.06 ha (0.14 acre) of this site is grass, and the remaining 0.04 ha (0.11 acre) is a playground. There are no athletic facilities at this site. Adults and children use the playground to relax and have lunch. The

West Oakland community, estimated at approximately 23 to 30 persons per day (Gullet, D., November 5, 1996, personal communication) uses this playground. Bertha Port Playground has also experienced problems with litter and is viewed as a potential location for illegal drug activities (Morgan, R., November 5, 1996, personal communication).

Chester Street Playground

Chester Street Playground is owned by the City of Oakland and is approximately 0.5 ha (0.13 acre). This playground is located in West Oakland, west of I-880, and is bordered by Chester Street to the southeast between 3rd and 5th Streets. This playground is mostly paved with a half-size basketball court and a small sand playground with play apparatus. There are no on-site restrooms. In mid-October 1996, vandals destroyed the play equipment, and the city has no plans to restore the playground to its previous condition (Morgan, R., November 5, 1996, personal communication. Prior to the October 1996 vandalism incident, it was estimated that about 20 people per day used this facility (Gullet, D., November 5, 1996, personal communication).

Union Pacific Intermodal Railyard North Training Wall

Although located on the Union Pacific Intermodal Railyard, it is presumed that the US Army Corps of Engineers owns the north training wall, a structure that is located along the northern edge of the Inner Harbor Channel. There is also a parallel south training wall along the northern edge of Alameda Island. Together, these two training walls defined the alignments for moles (i.e., bermed railroad tracks extending into the water) constructed at the Alameda and Oakland side of the Oakland Inner Harbor.

The north training wall is visible for about 731.7 m (2,400 feet), extending east from the western edge of the Union Pacific Intermodal Railyard. To the east, this training wall is completely buried under fill. It is presumed that more than 2,134 m (7,000 feet) of the training wall are buried in this manner.

The north training wall was originally seen as an underwater jetty made of stone and pilings and designed to train the channel, forcing it to scour itself and deepen the channel for navigational purposes. Later, as the wall was constructed, it was raised above the high-water mark, converting it into a jetty. The north training wall is backfilled and in places is covered by fill installed by the railroad many years after the wall was constructed.

Access to this historic property is via Ferro Street but it is not accessible by the public. The north training wall is part of the Union Pacific Intermodal Railyard that employs about 55 workers. It is not used for any purpose.

Southern Pacific Railroad Oakland 16th Street Station and 16th Street Tower

The Southern Pacific Railroad Oakland 16th Street Station and Tower is located at
the end of 16th Street off Wood Street in West Oakland. The station was

constructed in 1911-1912 by the Southern Pacific Railroad and is 83.2 m (273 feet) long overall, 18.3 m (60 feet) high, and contains beaux-arts decorative details. The 16th Street Tower is a three-story reinforced concrete structure. This depot was an active train station from 1912 up until it was damaged in the 1989 Loma Prieta earthquake, when other buildings in the station area were converted for temporary use as a train station. The historic station is vacant and no longer used. Train service is now provided at two new Amtrak stations at Emeryville and Jack London Square.

San Francisco Bay Trail

The San Francisco Bay Trail is a network of proposed and existing multi-use pathways circling San Francisco and San Pablo Bays. When complete, it will encompass a 644-kilometer (400-mile) route through all nine Bay Area counties and 42 shoreline cities. Approximately 274 kilometers (170 miles) of the planned trail have been completed. The Bay Trail offers walkers, runners, cyclists, nature lovers, and hikers access to the bay and its many diverse resources.

Figure 3-5 on EIS/EIR page 3-11 depicts the existing segments and conceptual alignments of the Bay Trail in Oakland and Alameda. Two short segments of the Bay Trail are currently designated in the JIT vicinity and come under the protection of section 4(f). The closest Bay Trail segment to the JIT extends along 7th Street west of Maritime Street. The trail is within the 7th Street right-of-way and is not separated from the roadway. The Port has been granted an order to vacate the western portion of 7th Street and will provide right-of-way for a future separated bicycle path. A direct section 4(f) use will not occur because future adjustments or changes in the alignment of 7th Street or the trail will not substantially impair the continuity of the trail. The other existing short segment of the Bay Trail is southwest of Middle Harbor Road near Middle Harbor Park and removed from the JIT. JIT proximity impacts to these two short segments of designated Bay Trail are addressed below.

The remaining portions of the Bay Trail in the JIT vicinity do not currently exist, are conceptual in nature, and are, therefore, not protected by the provisions of section 4(f). However, to assure mutual compatibility between the future Bay Trail and future Port facilities, the Port will coordinate further planning and development of the JIT and other Vision 2000 facilities with the planning and development of the Bay Trail by the Association of Bay Area Governments, the Oakland City Parks and Recreation Department, the National Park Service, and other appropriate agencies. Future Port Vision 2000 project-specific environmental evaluations will describe and evaluate the mutual development of the Bay Trail and Port facilities.

IMPACTS ON OTHER PARKS, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES

Access

JIT operations would not restrict access to 4(f) resources in the project vicinity. During JIT construction, access to Port View Park and Middle Harbor Park could be affected by increased truck traffic along 7th Street and Middle Harbor Road, respectively. JIT construction under all four project alternatives would also require reconstruction and/or extension of Middle Harbor Road through the FISCO site. However, measures will be taken to keep these two roads open to public through-traffic and therefore not reduce or interfere with public use of these two parksites (see Measures to Minimize Harm). There would be no access impacts at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific rail line because no new construction along these tracks is proposed as part of the JIT, therefore, existing access to these resources would not be disturbed.

The Port's Vision 2000 Program includes a public access component that will substantially increase the amount of usable public recreational and open space opportunities in the Middle Harbor area (31 new acres of public shoreline access under the preferred Reduced Harbor Fill Alternative) and will include improved linkages to the Bay Trail at 7th Street (see EIS/EIR Section 2.2.6). As described above, the Port will coordinate with applicable agencies during planning and development of the JIT and other Vision 2000 facilities with planning and development of the Bay Trail.

Noise

Any of the four project alternatives could result in increased noise levels attributable to increases in truck and rail traffic that in turn, could effect noise-sensitive 4(f) resources. Noise generated by increased vehicle traffic is not expected to have a severe impact on nearby park 4(f) resources in the project vicinity. The Cypress Freeway, scheduled for completion sometime in 1997, would reduce existing traffic volumes along many surface streets and would add this freeway segment as a new noise source in the neighborhood. Because of high existing and future reduced background traffic volumes anticipated on neighborhood streets with completion of the Cypress Freeway, future project-induced traffic would not have a severe impact on noise levels at these 4(f) resources and therefore would not substantially impair activities at these existing urban resources.

The Bay Trail segments in the project vicinity are within existing street rights-ofway used by trucks and automobiles to access the waterfront. It is not anticipated that future noise levels on these roadways would be substantially different than current noise levels and therefore would not substantially impair the use or enjoyment of the Bay Trail. Future noise levels from daily rail operations were estimated for six park sites in the immediate JIT vicinity. Rail operations for each alternative were broken down by train length and train type (i.e., Amtrak, switchers, and freights). A 15-MPH train speed was assumed for all rail operations. The rail operations noise model used for this analysis simulates the history of pass-by events and then computes CNEL levels based on event duration, number of daytime events, number of evening events, and number of nighttime events (details on existing and projected type and number of trains travelling along the Southern Pacific mainline in the Bay Area are documented in Appendix J.3 in Volume II). Calculations were performed with and without train horn noise. The rail operations noise model uses locomotive noise equations from Lotz and Kurzweil (1979) and Remington, Rudd, and Mason (1980). Railcar noise equations used in the model are from Lotz and Kurzweil (1979).

As shown in Table C-2, future projected noise levels at the six nearby 4(f) park sites would be lower than the 75 decibels (dB) estimated at FISCO in the mid-1980s (US Navy 1990). Therefore, it is anticipated that none of the alternatives would generate noise levels from rail operations that would substantially impair use of parks or playgrounds, including existing portions of the Bay Trail, within 0.8 km (one-half mile) of the JIT. The Union Pacific training wall and Southern Pacific 16th Street Station are not publicly accessible and are not noise-sensitive resources, therefore project noise would not substantially impair the use or integrity of these resources.

Table C-2
Noise Impacts of Rail Operations at Park and Playground Locations within 0.8 km (one-half mile) of the JIT

	CNEL Increment from Rail Operations (dB)					
Park	Maximum Marine/ Maximum Rail	Minimum Marine/ Minimum Rail	Maximum Marine/ Minimum Rail	Reduced Harbor Fill		
Port View Park	53.8	53.3	53.5	53.5		
Middle Harbor Park	54.5	54.1	54.6	55.2		
Ernie Raimondi Field	53.8	53.3	53.4	53.3		
Willow Mini Park	53.9	53.8	53.9	54.0		
Bertha Port Playground	54.5	54.2	54.5	54.7		
Chester Street Playground	55.5	54.0	54.2	55.5		

Note: Analyses assume no routine sounding of train horns in the JIT area.

There are eight additional parksites, as well as one wildlife area and one ecological reserve north and east of the proposed JIT site, that are located within 229 m (750 feet) of the Southern Pacific mainline tracks (see Figures C-8 and C-9):

- Aquatic Park (Berkeley);
- East Shore Park (Richmond)
- Crescent Park (Richmond);
- Boorman Park (Richmond);
- Lucas Park (Richmond);
- Point Pinole Regional Shoreline (Contra Costa County, managed by East Bay Regional Parks District);
- San Pablo Bay Regional Park (Contra Costa County, managed by East Bay Regional Parks District)
- Carquinez Strait Regional Shoreline Park (Contra Costa County, managed by East Bay Regional Parks District)
- Point Edith Wildlife Area (Contra Costa County)
- Peytonia Slough Ecological Reserve (Solano County)

The existing daily number of freight trains travelling north along the mainline segment between the JIT and Richmond is 20. The projected average increase in the number of freight trains travelling along this segment ranges from four under the Minimum Marine/Minimum Rail Alternative to 11 under the Maximum Marine/Maximum Rail, Maximum Marine/Minimum Rail, and Reduced Harbor Fill Alternatives. Twelve freight trains travel north daily in the mainline segment between Richmond and Martinez. The projected average increase in the number of freight trains travelling along this segment ranges from eight under the Minimum Marine/Minimum Rail Alternative to 15 under the Maximum Marine/Maximum Rail, Maximum Marine/Minimum Rail, and Reduced Harbor Fill Alternatives (see Appendix J.3 in Volume II). However, noise caused by increases in train pass-by trips is not anticipated to cause a substantial decrease or impairment in the use or enjoyment of nearby 4(f) resources because of the existing high volume of train traffic along this corridor.

Table C-3 summarizes the results of the rail noise modeling analysis. Compared to conditions without the JIT project, JIT implementation would result in a noise level increase of less than 3 dB. Given the already high ambient noise environment in the vicinity of the Southern Pacific mainline tracks, this minor increase in noise would not substantially impair the use or enjoyment of these 4(f) resources by noise-sensitive receptors (also see Table 5-12, Section 5.1.11.2, page 5-67 in Volume I).

Table C-3
CNEL Noise Impacts of Rail Operations (dB) to Sensitive Receptors within 229 m (750 feet) of the Southern Pacific Mainline Tracks

No Action		Maximum Marine/ Maximum Rail Alternative		Minimum Marine/ Minimum Rail Alternative		Maximum Marine/ Minimum Rail Alternative		Reduced Harbor Fill Alternative		
Distance (m)	w/o Horn	w/Horn	w/o Horn	w/Horn	W/o Horn	w/Horn	w/o Horn	w/Horn	w/o Horn	w/Horn
229 (750 feet)	65.7	66.0	67.9	68.2	66.3	66.5	68.0	68.2	68.0	68.2

Air Quality

Recent air quality monitoring data near the project site is summarized in Tables 3-25 and 3-26 in Volume I of the EIS/EIR. Future carbon monoxide emissions would fall within the range of what has been historically recorded in the project area and therefore project emissions would not substantially impair the use or enjoyment of 4(f) properties in the JIT vicinity. Similarly, it is anticipated that there would be no significant carbon monoxide impact on 4(f) properties that are located near the Southern Pacific mainline tracks.

Projected future ozone precursor emissions without the project would be high compared to the BAAQMD's regulatory threshold of 15 tpy (see discussion under Impacts on Section 4(f) Properties) and JIT implementation under all four reuse alternatives would result in further increased emissions. However, these emissions would not substantially impair use or enjoyment of section 4(f) resources, including 4(f) resources in the immediate JIT vicinity and those adjacent to the Southern Pacific mainline tracks, because they are located in areas already affected by degraded air quality and existing rail operations.

All four project alternatives would require demolishing existing structures within the JIT footprint. This demolition activity would be a temporary source of fugitive dust and construction vehicle emissions. However, when properly controlled with best management practices, dust from these activities would not create a localized nuisance nor would it substantially impair the use or enjoyment of nearby 4(f) resources. The closest 4(f) resources to the proposed area of demolition and construction would be Port View Park and Middle Harbor Park. However, both sites are located approximately 366 m (1,200 feet) from the outer edge of the JIT's boundary; therefore, temporary air emissions from demolition activities would not be expected to interfere with use of these parks.

Visual

Demolishing FISCO buildings and multi-story warehouses, seen in the foreground from Port View and Middle Harbor Parks and the existing portions of the Bay Trail under all four project alternatives, would create more expansive viewing opportunities to the north and east towards downtown Oakland and the East Bay Hills. Short-term building demolition activities may result in temporary

visual impacts; however, given the industrial nature of surrounding property in the project area, any visual intrusion would not interfere substantially with use of these two parks.

The JIT would not have any adverse visual impacts to users of Ernie Raimondi Field, Willow Mini-park, Bertha Port Playground, or the Chester Street Playground. These four parksites are located east of the proposed Cypress Freeway currently under construction. In addition, noise walls are proposed around certain sections of the Cypress Freeway that could further block any existing views of the JIT site. The Union Pacific north training wall and Southern Pacific 16th Street Station are not publicly accessible and are located in highly urbanized industrial areas, therefore there would be no visual effects to these resources. There would also be no visual impacts at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

Wildlife and Vegetation

The 4(f) resources in the JIT project vicinity are located in disturbed, developed areas that support limited wildlife or vegetation resources. Therefore, there would be no impacts to wildlife or vegetation. No severe impacts to wildlife and vegetation would be expected at the 4(f) parks, wildlife area, or ecological reserve located along the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

Water Quality

The 4(f) resources in the project vicinity are located in disturbed, developed areas that do not contain natural water resources. Therefore, there would be no water quality impacts. No severe water quality impacts would be expected at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

CONCLUSION

Based upon the above information, it is FHWA's determination that the identified potential proximity impacts will not substantially impair the activities, features, or attributes of the section 4(f) resources addressed above and, accordingly, there is no "use" of these resources.

COORDINATION

The Navy and Port have consulted with the SHPO, ACHP, and Oakland Landmarks Preservation Advisory Board and have amended the terms of the 1994 MOA for leasing all of FISCO and the eventual disposal of FISCO to the Port. As described above, these applicable parties have prepared an amended historic mitigation plan, included in Appendix G in Volume II of this EIS/EIR. Additional coordination has taken place with the Department of the Interior,

National Park Service (see Comments and Responses in Volume I, Letter C). The Department of the Interior indicated they have no objections to section 4(f) approval of the proposed project provided the measures to mitigate impacts to historical structures are documented in the final section 4(f) evaluation in the Final EIS/EIR. These measures are included in Appendix G.

CONCLUSION

Based upon the above considerations, it is FHWA's determination that there is no feasible and prudent alternative to the use of land from the NSCO Historic District and that the proposed action includes all possible planning to minimize harm to the Naval Supply Center, Oakland Historic District resulting from such use.

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- Gullet, Dave, Area Manager, Oakland City Parks and Recreation Department. November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.

Luckhart, Dean, Port of Oakland. November 6, 1996, personal communication with Ed Bondoc, Tetra Tech, Inc.

Morgan, Roy, Area Administrator, Oakland City Parks and Recreation Department. October 28 and November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.

Yamashita, A., Park Supervisor 2, Oakland City Parks and Recreation Department. November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.

C.2 BCDC BAY PLAN POLICIES

A San Francisco Bay Conservation and Development Commission (BCDC) consistency determination is required under 15 CFR 930 Subpart F to enable FHWA approval of federal-aid ISTEA funds for the first phase of the JIT proposed as part of the Port of Oakland's Vision 2000 Program. The Port submitted a request to BCDC for this consistency determination on June 25, 1997.

The BCDC Bay Plan contains several applicable policies to the proposed joint intermodal terminal. These policies, and how the joint intermodal terminal satisfies the provisions of these policies, is briefly discussed below. BCDC will use this information to determine the consistency of FHWA's joint intermodal terminal funding action with the Bay Plan. FHWA will not approve a record of decision for this project until BCDC has determined that the joint intermodal terminal is consistent with the Bay Plan.

Port Policies

- 1. Port planning and development should be governed by the policies of the Seaport Plan and other applicable policies of the Bay Plan.
- 2. Some filling and dredging will be required to provide for necessary port expansion, but any permitted fill or dredging should be in accord with the Seaport Plan.
- 3. Port priority use areas should be protected for marine terminal and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses including trucking and railroad yards, freight forwarders, government offices relocated to the port activity, and marine services.

As described in Section 2.2.2 in Volume I of this EIS/EIR, FISCO is within the Port jurisdiction and is designated as a port priority use area in the April 1996 BCDC and Metropolitan Transportation Commission (MTC) Seaport Plan Update (see Figure 2-1 in Volume I). In conformance with this regional land use designation, the Port's Vision 2000 Program alternatives emphasize port-related activities, as opposed to other types of uses, such as residential. The development

of the Vision 2000 Program project alternatives was predicated largely upon the requirements for effective maritime cargo transportation operations, including provision for enhanced intermodal rail terminal capability.

No dredging or filling is required to construct the joint intermodal terminal under the Minimum Marine/Minimum Rail, Maximum Marine/Minimum Rail, or Reduced Harbor Fill Alternatives. Approximately 32 acres of solid fill is required to construct the joint intermodal terminal under the Maximum Marine/Maximum Rail Alternative.

Water Quality Policies

- 1. To the greatest extent feasible, the Bay marshes, mudflats, and water surface area and volume should be maintained and, whenever possible, increased. Fresh water inflow into the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses. Bay water pollution should be avoided.
- 2. Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the Regional Water Quality Control Board's Basin Plan. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Water Quality Control Board, should be the basis for carrying out the Commission's water quality responsibilities.
- 3. Polluted runoff from projects should be controlled by the use of best management practices in order to protect the water quality and beneficial uses of the Bay, especially where water dispersion is poor and near shellfish beds and other significant biotic resources. Whenever possible, runoff discharge points should be located where the discharge will have the least impact.

No filling or dredging is required to construct the joint intermodal terminal under the Minimum Marine/Minimum Rail, Maximum Marine/Minimum Rail, or Reduced Harbor Fill Alternatives; therefore, there will be no change to water surface area and volume. Under the Maximum Marine/Maximum Rail Alternative, the proposed fill would most likely be bay deposits and would not reduce the overall volume of the bay. The proposed joint intermodal terminal would not affect fresh water inflow into the bay.

As described under the mitigation for Impact 1, Pollutants in Runoff and Adjacent Waters, in Section 5.1.7 of EIS/EIR Volume I, the Port will undertake all necessary measures to avoid bay water pollution and maintain water quality. The Port's stormwater pollution prevention program shall be expanded to include the entire project site (including the area proposed for development of the joint intermodal terminal). Applicable proposed uses in that area shall be

inspected for compliance with the stormwater management program and the Port's BMPs. The Port, in conjunction with the Regional Water Quality Control Board, shall assist tenants with identifying and implementing appropriate BMPs. The Port shall also assist future tenants in retrofitting the stormdrain and sanitary sewer system, if necessary, and developing and implementing operational and facility BMPs for controlling stormwater quality consistent with their stormwater management program and stormwater pollution prevention plan (SWPPP).

Transportation Policies

2. Because of the continuing vulnerability of the Bay for filling for freeways, an effective program should be created to develop, test, and inaugurate new methods of transportation within the Bay Area. This should be undertaken by a regional transportation agency, preferably one that is part of a limited regional government.

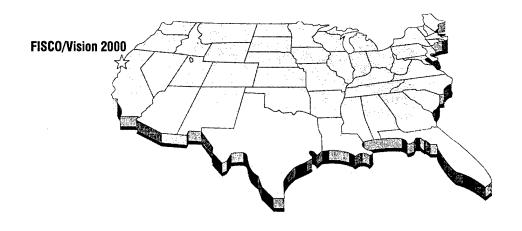
The proposed joint intermodal terminal would improve the efficiency of cargo transportation through the Bay Area and beyond and reduce freeway congestion by using rail. For example, container traffic from the Burlington Northern-Santa Fe railyard along Highway I-80 between Richmond and the Port would be removed as a result of the project because this railyard would relocate to the proposed joint intermodal terminal.

Appearance, Design, and Scenic View Policies

5. To enhance the maritime atmosphere of the Bay Area, ports should be designed, whenever feasible, to permit public access and viewing of port activities by means of (a) viewpoints (e.g., piers, platforms, or towers), restaurants, etc., that would not interfere with port operations, and (b) opening between buildings and other site designs that permit views from nearby roads.

Although not proposed as part of the joint intermodal terminal project, the Port's broader Vision 2000 Program provides for new public access to the Middle Harbor. The Port's preferred public access plan calls for development of a variety of recreation and community facilities in this area, including a snack bar, public pavilion, and fishing pier, that allow for viewing of adjacent port operations at the joint intermodal terminal. The proposed joint intermodal terminal would improve visual access to the bay because it would remove remaining buildings on the FISCO property.

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APPENDIX D PUBLIC INVOLVEMENT

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DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1 Ser 185/EP6-978 May 30, 1996

PUBLIC NOTICE

Subject:

Notice of Scoping of Public Concerns regarding a combined Environmental Impact Statement/Environmental Impact Report on the Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, California

The United States Navy in association with the Port of Oakland, California, announces its intent to prepare a joint Environmental Impact Statement /Environmental Impact Report (EIS/EIR) for the proposed disposal and reuse of the Fleet and Industrial Supply Center, Oakland (FISCO), property and structures in Oakland, California. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the base closure process of 1995, directed the Navy to close FISCO. The EIS/EIR will be prepared in accordance with Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500 - 1508), the California Environmental Quality Act (CEQA), and Public Law 102-484 Section 2834, as amended by Public Law 104-106 Section 2867. The Navy will be the EIS lead agency for NEPA documentation and the Port of Oakland will be the EIR lead agency for CEQA documentation.

FISCO is located approximately two miles west of the Oakland central business district, on the eastern shore of San Francisco Bay. It consists of approximately 528 acres and has about 125 structures that support general supply operations, waterfront operations and administration.

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the FISCO property and subsequent reuses. FISCO is within the planning jurisdiction of the Port of Oakland. The Port of Oakland Vision 2000 Program proposes development of ship, railroad, and truck freight handling facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California and an intermodal port of national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The development of the Port of Oakland Vision 2000 Program is expected to require additional property outside of the FISCO boundary in order to meet the objectives of the Program. This joint EIS/EIR will provide a program level analysis supporting both the Navy NEPA requirements to describe potential environmental impacts associated with the property disposal at FISCO, and the Port of Oakland CEQA requirement to analyze environmental impacts of implementing the Vision 2000 Program.

The EIS/EIR will evaluate a "No Action" Alternative and several reuse alternatives. The "No Action" Alternative would result in the federal government indefinitely retaining ownership of FISCO property. Under the "No Action" Alternative the Navy would continue leasing property to the Port of Oakland under existing 50 year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions. The reuse alternatives are expected to combine the common land use components of a railroad terminal, marine terminals, public waterfront access and marine habitat enhancement. As FISCO is within the Port of Oakland jurisdiction and is designated as a Port Priority use in the April 1996 San Francisco Bay Conservation and Development Commission and the Metropolitan Transportation Commission Seaport Plan Update, alternatives would emphasize port-related activities. Revisions to these alternatives may be developed during the public scoping period. The EIS/EIR will evaluate the potential for environmental impacts to traffic conditions, air quality, biological resources, cultural resources, utilities, and other environmental issues through this scoping process.

Federal, state and local agencies, and interested individuals are encouraged to participate in the scoping process for the EIS/EIR to determine the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on Thursday June 13, 1996 at 7:00 p.m., at the McClymonds High School auditorium located on 2607 Myrtle Street (near 26th Street) in Oakland, California. In the interest of available time, each speaker will be asked to limit oral comments to five (5) minutes.

In addition, written comments may be submitted by July 1, 1996 to Mr. Gary J. Munekawa, Environmental Planning Branch, Code 185GM, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone 415-244-3022, fax 415-244-3737. For further information regarding the Port of Oakland Vision 2000 Program please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, CA 94607, telephone 510-272-1181, or fax 510-465-3755.

ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT FOR DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY CENTER OAKLAND (FISCO), CALIFORNIA INFORMATION SHEET

Federal and State Lead Agencies for EIS/EIR Preparation

The United States Navy and the Port of Oakland are preparing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental consequences potentially resulting from the proposed disposal and reuse of the Fleet Industrial and Supply Center, Oakland (FISCO), property and structures in Oakland, California. The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as implemented by the 1995 base closure process, directs the Navy to close FISCO. The Navy is authorized to convey the property from Navy ownership under Public Law 102-484, Section 2834, as amended by Public Law 104-106, Section 2867. Full operational closure is scheduled to occur in September of 1998. The Navy will be the lead agency for documentation pursuant to the National Environmental Policy Act (NEPA) as it applies to impacts potentially resulting from disposal of FISCO property and structures. The Port of Oakland will be the lead agency for documentation pursuant to the California Environmental Quality Act (CEQA) as it applies to impacts potentially resulting from implementation of its Vision 2000 Program.

Scope of EIS/EIR Analysis

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the FISCO property by the Navy and subsequent reuse of FISCO. FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's Vision 2000 Program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives: (1) a Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A); (2) a Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B); (3) a Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C); and (4) a Reduced Fill Alternative (Alternative D). Although revisions to alternatives may be refined during the public scoping period, these four alternatives are expected to combine the common land use components of a joint intermodal terminal, marine terminals, and public waterfront access and marine habitat enhancement. The No Action Alternative would result in the federal government indefinitely retaining ownership of FISCO property. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, as amended, and supported by the 1995 base closure decisions.

Purpose of This Public Scoping Hearing and the Public Involvement Program

The purpose of this public scoping meeting is to solicit public comments regarding the scope and content of the environmental document prior to its publication as a Draft EIS/EIR. Written comments must be postmarked no later than July 1, 1996, in order to assure their full consideration in the EIS/EIR preparation. This hearing is part of the overall public involvement program established for the EIS/EIR for Disposal and Reuse of FISCO. The Port of Oakland also plans additional meetings regarding the overall Vision 2000 Program.

D-3

Schedule for Receiving Further Public Input

Further public input will be solicited following publication of the Draft EIS/EIR in early 1997. Public comment on the Draft EIS/EIR will continue through a 45-day public review period and will also include one more public hearing. Written responses to public comments received on the Draft EIS/EIR will be prepared and included in the final document. If you would like to submit written comments or wish to be added to the Navy mailing list for future information, please forward your comments and/or your name and address to the following contact person and address:

Mr. Gary Munekawa, Code 1852GM Engineering Field Activity West Naval Facilities Engineering Command 900 Commodore Drive San Bruno, CA 94066-5006

Telephone (415) 244-3022 Fax (415) 244-3737

LOCATION, DESCRIPTION, AND HISTORY OF FISCO

Location and Description of the FISCO Site

FISCO is located approximately two miles west of the City of Oakland central business district, on the eastern shoreline of San Francisco Bay. FISCO consists of approximately 528 acres and is bounded by 7th Street on the north, the Southern Pacific West Oakland railyard on the east, the Union Pacific railyard on the south, and Middle Harbor to the west. Existing facilities include about 125 structures that support general supply operations, waterfront operations, and administration.

History

In 1940, the Port of Oakland sold approximately 400 acres of uplands property to the Navy for one dollar. This property sale was recorded with a reversionary clause stating that the deed would revert back to the Port should the Government decide not to use the property for a naval supply depot, or other naval or military purposes. The Navy subsequently purchased additional lands to expand FISCO which do not revert to the Port of Oakland. Currently, approximately 400 acres of FISCO will automatically revert to the Port of Oakland. An additional 140 acres acquired by the Navy will not automatically revert to the Port of Oakland. The Navy is required to close FISCO and must convey these 140 acres from Navy ownership.

The site purchased by the Navy occupies former tidal marshlands that were dredged and filled in 1940. In 1941, the Naval Supply Center Oakland (FISCO's former name) began support operations for World War II. After the war and through the 1980s, FISCO was the main supply facility supporting Department of Defense activities in the Pacific Basin. The mission of FISCO was to provide supply and support services to fleet units and shore activities, as assigned.

Since the mid-1980s, the Port has been engaged in negotiations to acquire surplus Navy property for development and expansion of maritime and transportation-related facilities. Under the provisions of Public Law 102-484 (Section 2834[b]) of the Defense Authorization Act of 1993, the Navy is authorized to lease portions of FISCO to the Port for a period of 50 years. In late 1993, the Port successfully concluded negotiations with the Navy to acquire the first parcel of 220 acres of Navy property to expand intermodal rail facilities and maritime-cargo-related tenant uses. To date, approximately 135 acres of this leased area is in use as general transportation support activities, including warehousing, container depot activities, transloading, and container freight stations. The Port and Navy are currently working towards leasing the remaining FISCO property. Public Law 102-484 was amended to allow the Navy to transfer the 140 acres to the Port which do not automatically revert to the Port.

D-4

Development of the Vision 2000 Program is expected to require additional property outside the FISCO boundary to meet the Program's objectives. This non-Navy property may include the following parcels:

- Union Pacific's West Oakland Railyard owned by the Port (78 acres);
- Union Pacific's West Oakland Railyard owned by Union Pacific (9 acres);
- Southern Pacific's West Oakland Railyard (133 acres);
- Don-Gary lease owned by the Port (9 acres);
- Port-owned property rented on a space assignment basis (5 acres); and
- Oakland Army Base (11 26 acres).

VISION 2000 PROGRAM - ALTERNATIVES DEVELOPMENT

The Port of Oakland has investigated several land use configurations that combine different acreages of common land uses. These uses and configurations reflect development opportunities that meet the Port's overriding goals to increase productivity, to improve efficiency of integrated intermodal services, and to provide needed employment and open space opportunities. Land uses included as part of all four Vision 2000 Program alternatives to be analyzed in the EIS/EIR include:

- (a) An intermodal rail terminal (including working tracks, support tracks, and parking) could range between 190 and 340 acres.
- (b) Marine terminals development (including up to five new berths) could range between 122 and 278 acres.
- (c) A public waterfront access and marine habitat enhancement area could range up to 155 acres and would be located in the Middle Harbor Basin.

The attached table and maps are provided to assist you in contributing comments to this public involvement program. They include: (1) A table summarizing the main features of the four Vision 2000 Program alternatives; (2) A site map that identifies individual parcels; (3) A map of the Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A); (4) A map of the Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B); (5) A map of the Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C); and (6) A map of the Reduced Fill Alternative (Alternative D).

ENVIRONMENTAL ISSUES TO BE EVALUATED IN THE EIS/EIR

Although the issues of special concern may change as the EIS/EIR scoping process continues, the following issues have been initially identified as particularly sensitive to future development activities in the Vision 2000/FISCO project area:

- Traffic and circulation impacts associated with railroad, truck, and automobile operations;
- Land use conflicts:
- Socioeconomic impacts regarding changes to local employment, income, population, and housing characteristics, as well as the potential for adverse disproportionate effects on minority and low-income populations;
- Impacts on cultural resources;
- Impacts to sensitive biological habitat along the shoreline;
- Air quality and noise issues related to proposed development;
- Geologic and hydrologic conditions affecting development; and
- Identification and remediation of hazardous materials and hazardous waste.

The EIS/EIR will describe the existing conditions/environmental setting, identify significant and less than significant impacts due to disposal and proposed reuse, and will recommend mitigation measures for significant impacts identified for the following resources or categories of investigation:

Land Use

Geology and Soils

Traffic and Transportation

Socioeconomics

Biological Resources

Utilities

Aesthetics and Scenic Resources
Public Services

Air Quality

Hazardous Materials and Waste

Noise

Cultural Resources

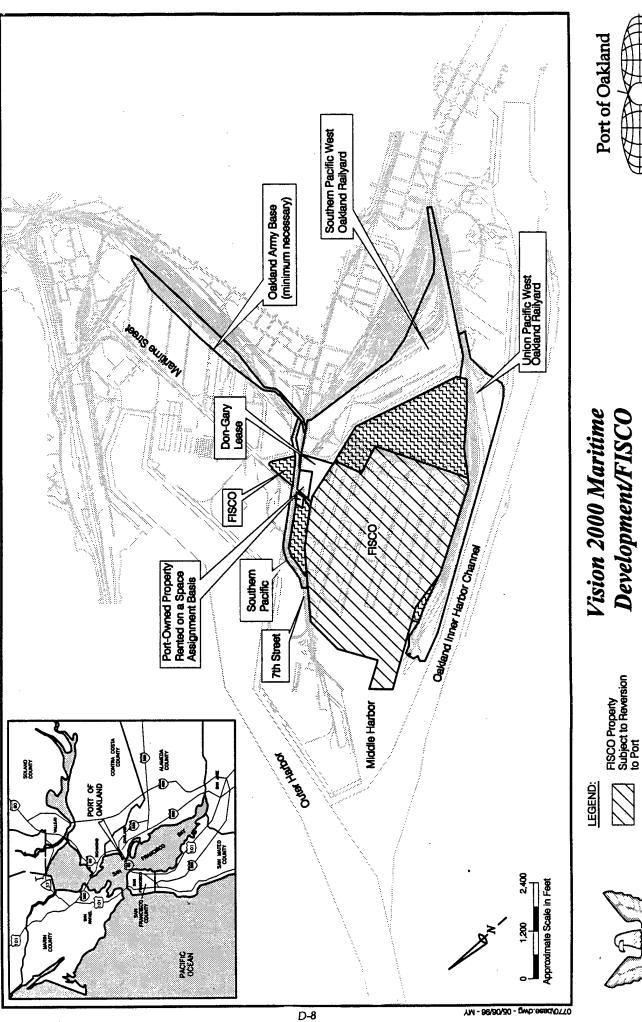
Water Resources Cumulative Effects

For specific information concerning the Vision 2000 Program, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Department, at telephone (510) 272-1181 or fax number (510) 465-3755. Thank you for participating with the Navy and the Port in the environmental planning process.

Alternatives Summary Environmental Impact Statement/Environmental Impact Report for Disposal and Reuse of Fleet Industrial and Supply Center, Oakland

	Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A)	Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B)	Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C)	Reduced Fill Alternative (Alternative D)	
RAILROAD TERMINAL					
Size (acres)	342 +/-	190 +/-	190 +/-	320 +/-	
Rail Service	Southern Pacific & Union Pacific	Burlington Northern- Santa Fe	Burlington Northern- Santa Fe	Southern Pacific & Union Pacific	
Loading Tracks				_	
Number of Tracks	7	8	8	7	
Total track feet	46,275	35,655	35,655	48,266	
Number of Car Spots	151	116	116	156	
Support Tracks - Oakland Army Base					
Number of Tracks	24	NA ¹	92	NA	
Total Track Feet	76,700	NA.	39,657	NA	
Number of Car Spots	241	NA	TBD	NA	
Acres	26	NA	11	NA	
Parking Slots					
Center-Row	3,823	2,950	2,950	4,316	
Satellite	1,350	702	702	1,215	
Chassis Slots	2,860	900	900	1,500	
MARINE TERMINALS					
Size (acres)	260 +/-	100 +/- (Middle Harbor) 22 +/- (Outer Harbor)	290 +/-	278 +/-	
Location	Inner Harbor	Middle/Outer Harbors	Inner Harbor	Inner Harbor	
Depth (feet)	1.890	2,000/1,400	1,800-2,578	1,726-2,313	
Berths					
Number	Five	Two	Five	Five	
Length (feet)/berth	1,200	1,200	1,200	1,200	
Increase Inner Harbor Channel Width?	no	no	. no	yes (new channel width = 730' +/-)	
MITIGATION AREA					
Size (acres)	155	55	155	155	
Harbor Transportation Center					
Relocate HTC offsite?	yes	no	yes	yes	
ONSITE INFRASTRUCTURE	<u> </u>				
Relocate Middle Harbor Road?	yes	no	no	yes	
Grade-Separated Access @ Main Gate?	no	yes	yes	yes	
FILL					
Total Fill Removed (acres)	(-27.82)	(-20.74)	(-27.82)	(-51.96)	
Total Fill Placed (acres)	65.12	56.15	38.17	38.17	
Total Net Fill (acres)	37.30	35.41	10.35	(-13.79)	

¹ Not applicable
² Another support track storage option is to develop all of it on FISCO property.



Source: Port of Oakland, 1996

Development/FISCO

Site Map









Source: Port of Oakland, 1996



Rail Support Tracks

Intermodal Rail Terminal

Oakland Outer Harbor

Vision 2000 Maritime Development FISCO Alternatives

Marine Terminal Development Area

0 1,200 2,400 Approximate Scale in Feet

Maximum Marine Terminal/Maximum Rail Terminal Alternative







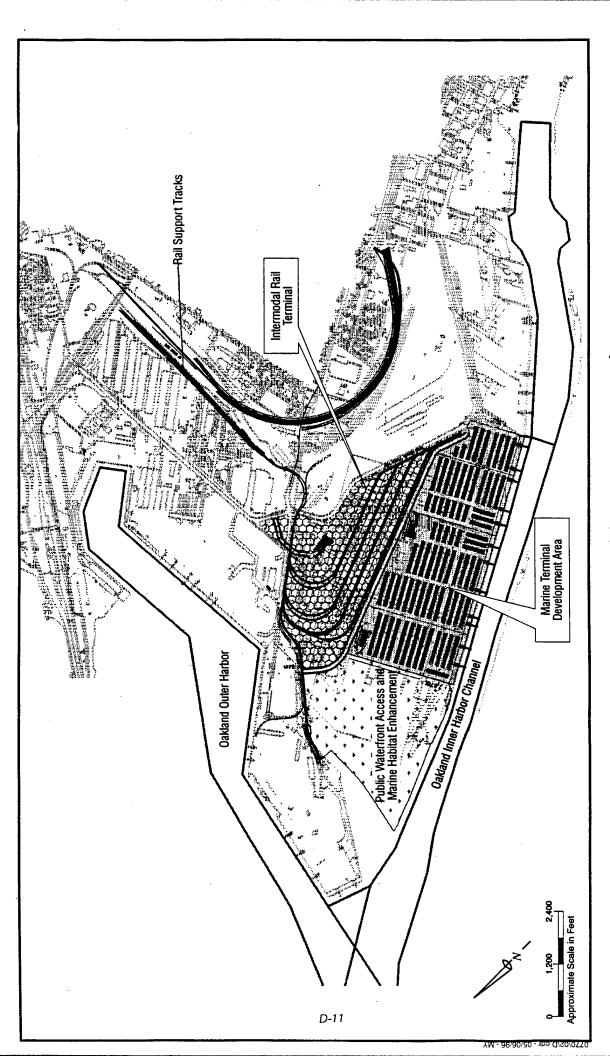
Vision 2000 Maritime Development/ FISCO Alternatives

Minimum Marine Terminal/Minimum Rail Terminal Alternative





Source: Port of Oakland, 1996



Vision 2000 Maritime Developmentl FISCO Alternatives

Maximum Marine Terminal/Minimum Rail Terminal Alternative









Vision 2000 Maritime Development/ FISCO Alternatives Reduced Fill Alternative





Source: Port of Oakland, 1996

Notice of Intent To Prepare a Joint Environmental Impact Statement/Environmental Impact Report for the Proposed Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, CA

Department of the Navy

SUMMARY: Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508), the California Environmental Quality Act (CEQA), and Public Law 102-484 Section 2834, as amended by Public Law 104-106 Section 2867, the Department of the Navy, in association with the Port of Oakland, California, announces its intent to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed disposal and reuse of the Fleet and Industrial Supply Center, Oakland (FISCO) property and structures in Oakland, California. The Navy will be the lead agency for NEPA documentation and the Port of Oakland will be the lead agency for CEQA documentation. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the base closure process of 1995, directed the Navy to close FISCO.

FISCO is located approximately two miles west of the Oakland central business district, on the eastern shore of San Francisco Bay. FISCO consists of approximately 528 acres and has about 125 structures that support general supply operations, waterfront operations, and administration.

The EIS/EIR will address potential impacts to the environment that may result from the disposal of FISCO property and subsequent reuses. FISCO is within the planning jurisdiction of the Port of Oakland. The Port of Oakland Vision 2000 Program proposes development of an intermodal system of ship, railroad, and truck freight handling facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The development of the Port of Oakland Vision 2000 Program is expected to require additional property outside of the FISCO boundary in order to meet the objectives of the Program. This joint EIS/EIR will provide a program level analysis supporting both the Navy NEPA requirements to describe potential environmental impacts associated with the property disposal at FISCO, and the Port of Oakland CEQA requirement to analyze environmental impacts of implementing the Vision 2000 Program.

The EIS/EIR will evaluate a `No Action'' alternative and several reuse alternatives. The `No Action'' alternative would result in the federal government indefinitely retaining ownership of FISCO property. Under the `no action'' alternative the Navy would continue leasing property to the Port of Oakland under the existing 50 year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions. The reuse alternatives are expected to combine the common land use components of a railroad terminal, marine terminals, public waterfront access and marine habitat enhancement. As FISCO is within the Port of Oakland jurisdiction and is designated as a Port Priority use in the April 1996 San Francisco Bay Conservation and Development Commission and the Metropolitan Transportation Commission

Seaport Plan Update, alternatives would emphasize port-related activities. Revisions to these alternatives may be developed during the public scoping period. The EIS/EIR will evaluate the potential for environmental impacts to traffic conditions, air quality, biological resources, cultural resources, utilities, and other environmental issues identified through this scoping process.

ADDRESSES: Federal, state and local agencies, and interested individuals are invited to participate in the scoping process to determine the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on Thursday, June 13, 1996, at 7:00 p.m., at the McClymonds High School auditorium, located at 2607 Myrtle Street (near 26th Street) in Oakland, California. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. In addition, written comments may be submitted by July 1, 1996, to Mr. Gary J. Munekawa, Environmental Planning Branch, Code 185GM, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone (415) 244-3022, fax (415) 244-3737. For further information regarding the Port of Oakland Vision 2000 Program, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, California 94604, telephone (510) 272-1181, fax (510) 465-3755. If you need special assistance to participate in this meeting, please contact Mr. Munekawa at least 72 hours prior to the meeting.

Dated May 23, 1996 S.L. Haycock, LCDR, JAGC, USN, Alternate Federal Register Liaison Officer. [FR Doc. 96-13460 Filed 5-29-96; 8:45 am] BILLING CODE 3810-FF-P

Governor's Office of Planning and Research

1400 Tenth Street Sacramento, CA 95814 EL LIMENTAL DEPT.



06 JUN 10 A9: 44

DATE:

June 4, 1996

RECEIVED

TO:

Reviewing Agencies

RE:

DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY

SCH# 96062010

Attached for your comment is the Notice of Preparation for the DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY draft Environmental Impact Report (EIR).

Responsible agencies must transmit their concerns and comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

JAMES MCGRATH
PORT OF OAKLAND
530 WATER STREET
OAKLAND, CA 94607

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Kristen Derscheid at (916) 445-0613.

Sincerely

ANTERO A. RIVASPLATA Chief, State Clearinghouse

Attachments

cc: Lead Agency

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	Business, Transportation, & Housing	Sandy Hesnard Caltrans - Divisi	P.O. Box 9428 Sacramento, C 916/324-1833	Alice Huffaker	Office of Specifice of Specification of Planning and A	Sacramento, C 916/657-7222	Ron Helgeson Calirans - Planning P.O. Box 942,874	Sacramento, C 916/653-9966	State and Consumer Services	Robert Sleppy Dept. of Genera	Sacramento, C. 916/324-0214	Office of Local Assistance 501 J Street, Suite 400	Sacramento, C. 916/445-3160	la Environmental	Mike Tollstrup Air Resources Board	2020 L. Street Sacramento, CA 916/322-8267	Mark deBie	Sacramento, CA	916/255-4164 Fa	State Water Res	P.O. Box 94421 Sacramento, CA	910/22/-44U8 F	State Water Res Division of Wat	F.O. Box 94421 Sacramento, CA 916/657-0912	Mike Falkenstem State Water Resou	Division of Wale 901 P Street, 3rd Sacramento, CA	916/657-1377 Fax 916/657- Dent of Toxic Substances	CEOA Tracking Center 400 P Street, Fourth Floor
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	Department of Transportation District Contacts	rtin Urkofsky	Cultrans, District 1 1656 Union Street Eureka, CA 95501	/0//445-5812 Fax Gary Otremba	Caltrans, District 2 P.O. Box 494040 Redding, CA 96049-4040	916/225-3133 Fax leff Pulverman	Caltrans, District 3 703 B Street Marysville, CA 95	916/327-3859 Fax 916/323-7669	Gary F. Adams Caltrans, District 4 P.O. Box 23660	Oakland, CA 94623-0660 510/286-5578 Fax 510/286-5513	Lawrence Newland Caltrans, District 5	San Luis Obispo, CA 93403-8114 805/549-3683 Fax 805/549-3077	Marc Birmbaum Caltrans, District 6	P.O. Box 12616 Fresno, CA 93778-2616	448-4088 Fax	Stephen J. Buswell Caltrans, District 7 120 South Spring St	Los Angeles, CA 90012 213/897-4429 Fax 213/897-4358	Harvey Sawyer Caltrans, District 8	P.O. Box 231 San Bernardino, CA 92402 979/383-4808 Fax 909/383-7934	ert Rubnke	Caltrans, District 9 500 South Main Street	372-0689 Fax 6	Dana Cowell Caltrans, District 10	F.O. Box 2046 Stockton, CA 95201 209/948-7906 Fax 209/948-7906	Lou Salazar Cultrans, District 11	2829 Juan Street San Diego, CA 92186-5406	o19/088-0002 Fax o Aileen Kennedv	Cultrans, District 12 2501 Pullman St.
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	Game - Regional Offices	Richard L. Elliott, Regional Manager Department of Fish and Game	601 Locust Redding, CA 96001 916/225-2363 Fax 916/225-2381	ddrick, Region t of Fish & Ga	1701 Nimbus Road, Suite A Rancho Cordova, CA 95670 916/358-2900 Fax 916/358-2912	Ken Aasen, Acting Regional Manager Department of Fish and Game	P.O. Box 47 Yountville, CA 94599 707/944-5518 Fax 707/944-5563	George Nokes, Regional Manager	Department of rish and Game 1234 East Shaw Avenue Fresno, CA 93710	209/445-6152 Fax 209/445-660 Denantment of Fish and Game	Environmental Services 330 Golden Shore, Suite 50 Long Beach, CA, 90802	32 Fax 310/59	California Energy Commi	ISI6 Ninth Street, MS-15 Sacramento, CA 95814	44 erican Heritao	915 Capitol Mall, Room 364 Sacramento, CA 95814 016/633-4082, Ex. 016/652-5300	Douglas Long	Public Utilities Commission 505 Van Ness Avenue San Francisco, CA 94102	11 Fax 415/70	State Lands Commission 100 Howe Avenue, Suite 1	Sacramento, CA 95825 916/574-1872 Fax 916/574-1885	Gerald R. Zimmerman Colorado River Board	770 Fairmont Avenue, Suite 100 Glendale, CA 91203-1035 818/543-4676, Fax 818/543-543-4685	Tahoe Regional Planning	P.O. Box 1038 Zephyr Cove, NV 89448 702/588-4547 Fax 702/588-4527	Thomas Ottoman Office of Emergency Services	P.O. Box 29998 San Francisco, CA 94129 415/666-9300	Debby Eddy
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NOP Distribution List	Icau agen		Nadell Gayou Resources Agency	1020 Ninth Street, Third Floor Sacramento, CA 95814 916/327-1722 Fax 916/327-1648	Nicole Leiria Dept. of Boating & Waterways	Sacramento, CA 95814 916/445-6281 916/327-7250	Elizabeth A. Fuchs California Coastal Co	San Francisco, CA 94105-2219 415/904-5200 Fax 415/904-5400	Reed Holderman State Coastal Consen	l330 Broadway, Suite II00 Oakland, CA 94612 510/286-1015 Fax 510/286-0470	Deborah Hermann Dept. of Conservation	801 K Street, MS-24-02 Sacramento, CA 95814 916/445-8733 Fax 916/324-0948	Gary Brittner Dept. of Forestry	1416 Ninth Street, Room 1516-2 Sacramento, CA 95814	5-9451 Fax 91 Greutzberg	Office of Historic Preservation P.O. Box 942896	916/653-9107 Fax 916/653-9824	Dept. of Parks and Recreation P.O. Box 942896	Sacramento, CA 94296-0001 916/653-0538	Wendy Halverson-Martin Reclamation Board	1020 Ninth Street, Room 240 Sacramento, CA 95814 916/327-1531 Fax 916/327-1600	Steve McAdam	Ness Avenue, Incisco, CA 94	415/55/-3686 Fax 41. Nadell Gayou	Department of Water Resources 1020 Ninth Street, Third Floor Sacramento, CA 95814 916/377.1727 Fax 916/377.1648	_	inh (Health	601 N. 7th Street, PO Box 942732 Sacramento, CA 94234-7320 916737-6111 Faw 916737-6002
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Sandy Hesnard Caltrans - Division of Aeronautics P.O. Box 942874 Sacramento, CA 94274-0001 916724-1833 Fax 916727-3093	Z S & S	NORTH COAST REGION (1) 5550 Skyline Blvd., Suite A Santa Rosa, CA 95403 707/576-2220 Fax 707/523-0135
Alice Huffaker California Highway Parrol Office of Special Projects	\$ 5 5 5 \$ 5 5 5	SAN FRANCISCO BAY REGION (2) 2101 Webster, Suite 500 Oakland, CA 94612 510/286-1255 Fax 510/286-1380
Sacramento, CA 95818 916/657-7222 Fax 916/452-3151		CENTRAL COAST REGION (3) 81 Higuera Street, Suite 200 San Luis Obispo, CA 93401-5427 805/549-3147 Fax 805/543-0397
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Consumer Services Robert Steppy Control of Gervices And D. Services And D.	E 25 35 35 35 35 35 35 35 35 35 35 35 35 35	CENTRAL VALLEY REGION (5) 3443 Router Road, Suite A Sacramento, CA 95827-3098 916/255-3000 Fax 916/255-3015
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Mark de Bie Calif, Waste Management Board 8800 Cal Center Drive Sacramento, CA 95826	\circ	Victorville Branch Office 15428 Civic Drive, Suite 100 Victorville, CA 92392-2359 619/241-6583 Fax 619/241-7308
916/255-4164 Fax 916/255-4071 Wayne Hubbard State Water Resources Control Board Division of Clean Water Programs	CO 7377	COLORADO RIVER BASIN 73720 (7) 73720 Fred Waring Drive, #100 Palm Desert, CA 92260-2564 619/346-7491 Fax 619/341-6820
F.O. Box 944212 Sacramento, CA 94244-2120 916/227-4408 Fax 916/227-4549 Phil Zentner	373.	SANTA ANA REGION (8) 3737 Main Street, Suite 500 Riverside, CA 92501-3339 714/782-4130 Fax 990-781-6288
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Dept. of Toxic Substances Control EQA Tracking Center 00 P Street, Fourth Floor 10. Box 806 siscramento, CA 95812-0806 116/324-3119 Fax 916/324-1788	OTHER	ER:

UNITED STATES NAVY

NEWS RELEASE

ENGINEERING FIELD ACTIVITY WEST

NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)
900 COMMODORE DRIVE • SAN BRUNO, CA 94066

FOR IMMEDIATE RELEASE Release # 96-04

For more information contact Jeff Young Phone (415) 244-3041 Fax: (415) 244-3010

Navy and Port of Oakland to prepare FISCO Environmental Impact Statement

The United States Navy and the Port of Oakland will prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental impacts of disposal and reuse of the Fleet Industrial and Supply Center, Oakland (FISCO).

The Navy will be the lead agency for National Environmental Policy Act (NEPA) documentation and the Port of Oakland will be the lead agency for California Environmental Quality Act (CEQA) documentation. The Defense Base Closure and Realignment Act of 1990, as implemented by the 1995 base closure process, directs the Navy to close FISCO.

The EIS/EIR will address potential impacts to the environment that may result from the conveyance of the FISCO property by the Navy and subsequent reuse of FISCO by the community.

FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's "Vision 2000" program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. Vision 2000 also includes development of public waterfront access and marine habitat enhancement. Development of the Vision 2000 program is expected to require additional property outside of the FISCO boundary in order to meet its objectives.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives. The "No Action Alternative," which would result in the federal government indefinitely retaining ownership of FISCO property, will also be evaluated. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions.

Environmental issues addressed in the EIS/EIR are expected to include land use, visual resources, socioeconomics, public services, cultural resources, biological resources, geology and soils, water resources, air quality, noise, traffic and transportation, utilities, and hazardous materials and waste.

The Draft EIS/EIR is expected to be published in early 1997. A public hearing and a 45-day review period will follow the publication and distribution of the Draft EIS/EIR.

A public hearing will be held on Thursday, June 13, 1996, at 7 p.m., at McClymonds High School, 2607 Myrtle Street, in Oakland. The purpose of this hearing is to receive written and verbal comments regarding the potential environmental impacts of disposal and reuse of FISCO. A brief presentation will precede the request for public comment. Navy and Port of Oakland representatives will be available at the hearing to receive comments from the public regarding issues of concern. It is important that federal, state, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during the preparation of the EIS/EIR.

Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. To be most helpful, scoping comments should clearly describe specific issues or topics which the commentor believes the EIS/EIR should address.

The public is invited to submit written comments by July 1, 1996 to Gary Munekawa, Code 1852, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-2402, (415) 244-3022, Fax (415) 244-3737. For further information regarding the Port of Oakland Vision 2000 Program, contact Loretta Meyer, Port of Oakland, 530 Water Street, Oakland, California 94604-2064, telephone (510) 272-1181, fax (510) 465-3755.

UNITED STATES NAVY

ENGINEERING FIELD ACTIVITY WEST

NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC) 900 COMMODORE DRIVE . SAN BRUNO, CA 94066

For more information contact

Jeff Young

Phone (415) 244-3041

Fax: (415) 244-3010

Site:

Fleet Industrial Supply Center, Oakland (FISCO)

Location:

In the vicinity of the Port of Oakland's Middle Harbor at the

northwest mouth of the Oakland estuary.

Mission:

FISCO (formerly called Naval Supply Center, Oakland), is the principal facility supporting Department of Defense activities in the Pacific Basin and is the Navy's largest west coast supply point. It's primary function is to provide support and supply services to fleet units and shore activities. In general, the facility has been used for storage and supply purposes. Very little manufacturing or

industrial activity has occurred over the years.

Size:

The installation encompasses approximately 529 acres and has about

125 structures.

Opened:

The facility was established in 1941 to support the Navy during World

War II.

Closure:

September 1998

BRAC'd:

BRAC 4, 1995

Status:

Daily operations will cease at the base in September 1998. The installation will then be placed in a caretaker status, with the Navy's Engineering Field Activities West acting as the landlord, until the property is conveyed to the Port of Oakland. Special legislation that

allows the Navy to convey the property directly to the Port of

Oakland. Approximately 134 acres of property is now being leased to the Port.

Cleanup:

The California Environmental Protection Agency is the lead regulatory agency responsible for the cleanup. Several environmental investigations have been conducted between 1977 and the present time, with a total of 99 sites evaluated. Of those sites, 74 showed no potential impact to the environment or public health. The Navy will propose no cleanup action on 12 sites; 13 sites will be addressed in a Record of Decision (ROD). The ROD is expected to be completed by October 1997. Contamination, including Volatile Organic compounds and Total Petroleum hydrocarbons, has occurred in areas where paints, solvents, and hazardous materials were used and/or stored. Preliminary estimates place the cleanup costs at approximately \$42,300,000.

SCOPING NEWSPAPER ADVERTISEMENTS

The following newspaper advertisement announcing the preparation of the Disposal and Reuse of FISCO/Vision 2000 Maritime Development EIS/EIR and the start of the public scoping process was published in the following papers:

San Francisco Chronicle - Sunday, June 2, 1996, and Monday June 3, 1996.

Oakland Tribune - Sunday, June 2, 1996, and Monday June 3, 1996.

Oakland Post - Sunday, June 2, 1996.

PUBLIC NOTICE

The United States Navy and the Port of Oakland announce their intent to prepare a joint Environmental Impact The United States (Navy and the Port of Oakland arnounce their intent to prepare a joint Environmental impact Report (EIS/EIR) to evaluate the environmental impacts of obsposal and reuse of the Fleet industrial and Supply Center, Oakland (FISCO) in Oakland, CA. The Navy will be the lead agency for National Environmental Policy Act (NEPA) documentation and the Port of Oakland will be the lead agency for California Environmental Quality Act (CEQA) documentation. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the 1995 base closure process, directs the Navy to close FISCO. The Navy has the authority to dispose of FISCO under Public Law 102-484, Section 2834, as amended by Public Law 104-106, Section 2867, in order to implement the 1995 base closure process decisions.

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the RSCO property by the Navy and subsequent reuse of RSCO. FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's Vision 2000 Program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. The Vision 2000 Program also includes devel opment of public waterfront access and marine habitat enhancement. Development of the Vision 2000 Program is also expected to require additional property outside of the FISCO boundary in order to meet the Program's objectives.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives. The No Action Alternative, which would result in the federal government indefinitely retaining ownership of FISCO property, will also be evaluated. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions. Probable environmental issues that will be addressed in the EIS/EIR include, but 1995 pase cossure occisions. Produble environmental issues that will be aduressed in the ESYCH ancide, but are not limited to, land use, visual resources, socioeconomics, public services, cultural resources, biological resources, geology and sois, water resources, ar quality, noise, traffic and transportation, utilities, and hazardous materials and waste. The Draft EIS/ER is due to be published in early 1997, A public hearing and a 45-day review period will follow the publication and distribution of the Draft EIS/ER.

PUBLIC SCOPING HEARING

Thursday, June 13, 1996, at 7:00 p.m. at the following address McCLYMONDS HIGH SCHOOL **2607 MYRTLE STREET**

OAKLAND, CA The purpose of this hearing is to receive written and verbal comments regarding the potential environmental impacts of the disposal and proposed reuse of FISCO. A brief presentation will precede the request for public comment. Navy and Port of Caldand representatives will be available at this hearing to receive comments from the public regarding issues of concern to the public. It is important that federal, stata, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during

the preparation of the EIS/EIR.

Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. To be most helpful, scoping comments should clearly describe specific issues or topics which the commentor believes the EIS/EIR should address. Written statements must be received at the address below no later than July 1, 1996.

> MR. GARY MUNEKAWA, CODE 1852GM ENGINEERING FIELD ACTIVITY WEST **NAVAL FACILITIES ENGINEERING COMMAND** 900 COMMODORE DRIVE SAN BRUNO, CA 94066-5006 Telephone (415) 244-3022 Fax (415) 244-3737

For further information regarding the Vision 2000 Program, contact Ms. Loretta Meyer, Port of Caldand, 530 Water Street, Caldand, California 94607, telephone (510) 272-1181, fax (510) 465-3755.

		Scoping Summary
Commentor	Form	Issues
Commentor David Farrel, US Environmental Protection Agency, Region 9	Form Letter Dated 6/26/96	Issues Develop alternatives not related to the Vision 2000 Program. Define all parameters (time, geographic area) relevant to the analysis. Establish clear statement of purpose and need. Include non-FISCO property part of Vision 2000 in setting section. Include analysis of cumulative effects. Develop "preferred" and "environmentally-preferred" alternatives. Develop a preferred alternative that balances environmental quality and economic opportunity. Describe nearby residential areas and potential impacts to these areas. Describe impact on minority community and low-income population. Present opportunities for the affected communities to provide input. Identify specific potential mitigation measures. Discuss the current air quality status, including: air quality conditions, problems, and planning. air quality impacts from proposed action. conformity with State Implementation Plan. mitigation measures. project alternatives. Identify existing traffic, circulation, and parking patterns. Identify health, safety, and annoyance issues related to traffic. Analyze reuse in context of relevant transportation changes. Identify transit needs related to proposed action. Work with regional partners to identify impacts from reuse. Analyze potential future uses for the Oakland Army Base, if to be included as part of the Vision 2000 Program. Identify existing and projected land use conflicts in West Oakland. Identify dredging requirements associated with each alternative. Identify instification for the amount of dredging required. Characterize baseline conditions for wetlands, aquatic systems, estuaries, and other ecological habitats. Include a mitigation plan that ensures no net loss of wetlands. Comply with the following provisions of the Clean Water Act: there is no practicable alternative. will not contribute to the degradation of waters. will not violate water quality standards, toxic-effluent standards, or jeopardize the continued existence of species or their habitats. lidentify hazardous materials storage, di
		Define significance criteria.

Commentor	Form	Issues
Nicole Gauthier, US Army Corps of Engineers	Letter Dated 6/12/96	 Meet with Sacramento District to discuss reuse of the Oakland Army Base.
John Turner, State of California Department of Fish and Game	Letter Dated 6/25/96	 Identify and remediate hazardous waste. Identify natural resources damages from hazardous materials. Identify impacts on sensitive biological habitat along the shoreline. Identify impacts on sensitive terrestrial resources. Develop mitigation for loss of fish and wildlife resources
Joe Browne, State of California Department of Transportation	Letter Dated 6/13/96	 Complete traffic study to determine I-880 and I-980 impacts including: trip generation, distribution, and management. average daily traffic, peak hour volumes, and cumulative traffic. highway and non-highway improvements and services mitigations. mitigation financing and scheduling. mitigation implementation and monitoring responsibilities.
Liz Black, Historical Resources Information System	Letter Dated 7/3/96	 Recommend conducting a study to determine if the project area has any unrecorded archaeological sites. Stop work in any area where archaeological resources are discovered.
Marc Roddin, Metropolitan Transportation Commission	Letter Dated 6/4/96	 Consider various channel dredging levels to support marine terminals. Identify assumptions and methodology for traffic circulation analysis. Document transportation model used. Document trip generation, distribution, modal split, and assignment equations in model. Include only fully funded projects in transportation network. Provide data supporting the choice of travel behavior assumptions. Allow for a worst case analysis of traffic impacts. Present traffic information for interstate, arteries, and internal roads. Include volume to capacity ratios and level of service with implementation only of fully funded transportation projects. Discuss unfunded or partly funded transportation projects as project mitigation, with potential funding sources and budgets identified. Use 2010 or 2015 as analysis year. Evaluate reducing demand for single occupant automobile. Evaluate as a partial reuse an overnight truck service complex.
Linda Scourtis, San Francisco Bay Conservation and Development Commission	Letter Dated 7/1/96	 Evaluate as a partial reuse an overnight truck service complex. Describe BCDC consistency determination authority. Develop reuse that requires the least possible amount of Bay fill. BCDC supports Alternative D; removes the greatest amount of fill. Indicate fill requirement for marine terminal near Berth 10. Detail new and additional maintenance dredging requirements. Clarify the increased dredging requirement necessary to create Middle Harbor Channel. Follow State Water Resources Control Board and Regional Water Quality Control Board policies on water quality. Maintain/increase bay marsh, mudflat, and water surface area/volume. Protect marshes and mudflats. Protect fish and wildlife habitats. Improve public access to maximum extent possible. Include appropriate mitigation measures.

Commentor	Form	Scoping Summary Issues
Brian Wiese, San Francisco Bay Trail, Association of Bay Area	Letter Dated 6/25/96	 Address potential opportunities for shoreline public access and the provision of safe access to and on the site for recreational users and commuting cyclists.
Governments Jean Hart, Alameda County Congestion Management Agency	Letter Dated 6/20/96	 Submit land use data to conduct a CMA-traffic analysis of the project. Include a financial program in transportation mitigation measures. Consider participation in the I-880 corridor transportation planning process as a general mitigation measure for transportation impacts. Address all impacts on the metropolitan transportation system. Analyze roadway level of service standards for 2000 and 2005. Satisfy CMA criteria with transportation mitigation measures. Analyze transit level of service standards, including transit funding as a mitigation measure. Consider impact on transportation demand management measures.
Colette Meunier, City of Alameda	Letter Dated 6/28/96	 Discuss funding sources for roadway and transit improvements. Discuss impact of project on traffic through Webster and Posey Tubes. Discuss impact of project on increasing truck traffic on I-880 and I-980. Discuss impact of project on Sacramento/San Jose railroad corridor. Discuss impact of project on Alameda/Oakland Ferry. Discuss impact on shoreline access and Bay Trail. Discuss impact on transportation corridor providing regional access between NAS Alameda and I-880 and I-980. Evaluate suitability of site to accommodate the projected regional need for container port facilities.
Kay Miller, Alameda Reuse Redevelopment Authority	Letter Dated 7/1/96	 Discuss impact on air cargo operations at Oakland Airport. Concur with comments made by City of Alameda in June 28 letter. Evaluate visual impact, especially on proposed NAS Alameda reuse. Evaluate cumulative impacts with NAS Alameda reuse plan.
Various Signatories, Secondary Materials Industries Working Group	Letter Dated 6/24/96	 Analyze impacts of removing structures. Analyze waste generated during new construction. Reuse entire buildings if possible; if not, salvage reusable portions and recycle unusable portions of the structure. Dispose of, properly, materials containing asbestos or lead-based paint. Do not burn or mulch wood. Deconstruction has beneficial socioeconomic impacts. Examine the cumulative impact of structure disposal on area landfills. Deconstruction can save historically significant portions of buildings or provide replacement parts for other buildings.
Jean Matsuura, League of Women Voters of the Bay Area Arthur Feinstein, Golden Gate Audubon Society William Coburn, Oakland Heritage Alliance	Letter Dated 6/30/96 Letter Dated 6/28/96 Letter Dated 6/20/96	 Provide an alternative that does not require placing any fill. Present impacts to natural resources, especially wetlands, eelgrass beds, and endangered species, such as least terns and brown pelicans. Consider impacts on California least tern. Consider impacts to eelgrass beds, if any. Present a "no fill" alternative. Include one alternative that minimizes the effect on historic structures. Consider an alternative that would retain all or a portion of the historic resources.

Commentor	Form	Issues
Judith Bloom	Verbal •	Learned of the meeting at 5:00 p.m. on the day of the meeting.
	Comment •	Make Vision 2000 materials clearer.
	on .	Include explanation of alternatives impact on community concerns.
	6/13/96 •	Create an electric truck plant to support Port activities.
	•	
	•	Wants to understand how the joint intermodal terminal would work
		and concluded that such a terminal might even mitigate truck effects.
George Burtt	Verbal •	Attendance at the hearing was too low.
	Comment •	Vision 2000 is a project that Oakland can be proud of.
	on •	Port's presentation and public information package is insufficient.
	6/13/96 •	Port must communicate with citizens and businesses.
	•	Vision 2000 will satisfy employment and warehouse space needs.
xvr:11:	•	West Oakland Commerce Association endorses Vision 2000.
William	Verbal •	NEPA process could be challenged based on inadequate outreach.
Chorneau	Comment •	and and have enough
	on ·	time to mobilize concerned citizens.
	6/13/96 •	Recommended that the meeting information be printed on the first page
		of the scoping mailing.
	•	Requested public access in the Port's proposal.
	•	Outlined a list of components that should be presented in the EIS/EIR,
		all of which are required features of NEPA and CEQA, and are
		presented in his letter on behalf of the Coalition for West Oakland Revitalization.
William	Letter •	· · · · · · · · · · · · · · · · · · ·
Chorneau,	Dated	Identify different lead agency; perhaps Oakland Office of Economic Development.
Coalition for West	6/27/96 •	Schedule second hearing; first notice of hearing was inadequate.
Oakland	0/2///0	Expand scope to include issues important to entities other than Port.
Revitalization	•	Describe the "no project" alternative in a detailed manner.
	•	Include an alternative that does not include the nonreversionary land.
	•	Include alternatives that provide more public access and marine habitat
		enhancement by decreasing the size of rail or marine terminals.
	•	Identify mitigation measures for impacts, especially socioeconomic.
	•	Present setting, impacts, and mitigation in one section.
	•	Setting, as stated in CEQA, should describe the study area "as it exists
		before the commencement of the project."
	•	Present setting from site, local, and regional perspective.
	•	Separate impacts related to construction and operation.
	•	Demonstrate how thresholds of significance are identified.
	•	Show level of significance for each impact before and after mitigation.
	•	Cover employment generation, housing, public access and wildlife
		habitat, transportation, public services, cumulative impacts and growth
		inducing impacts, air quality, water, noise, visual, and land use.
	•	Address the following additional mitigations:
		- additional shoreline access.
	•	- non-polluting alternatives to internal combustion engines.
	,	- buffer zone of trees.
		- truck emission standards.
		- adequate on-site truck parking
		 Port funding for a new West Oakland park.

Scoping Summary					
Commentor	Form	Issues			
Margaret Gordon	Verbal Comment on 6/13/96	 Public outreach process was not adequately conducted. Hearing conflicted with other community meetings. Proposed a door-to-door outreach program. No provisions for nonprofits to acquire FISCO property. Port and City formed a partnership without involving citizens. 			
Harold Logwood	Verbal Comment on 6/13/96	 Received letter; saw public notices in both Oakland newspapers. Navy made a good effort to inform the public of FISCO disposal. Applauded the Navy for initiating a collaborative effort. Asked that the Navy not be alarmed by the poor attendance but to 			
Nancy Nadel	Letter Dated 6/10/96 and read by Ellen Parkinson on 6/13/96	 Include original documents describing land transfer from City to Navy. Because there was no public involvement in amending PL 102-484, alternatives that do not include nonreversionary land should be developed. These alternatives should attract businesses that: (1) create more jobs than proposed Port alternatives; (2) benefit from close proximity to the Port; (3) use recycled materials; (4) conserve air, water, and energy; (5) do not create land fill waste; (6) promote diversity; and (7) ensure minimal negative environmental impact. Explore the following mitigations: (1) give West Oakland residents first priority for new jobs; (2) establish a community task force for traffic circulation issues; (3) establish emission standards for trucks at the Port and have trucks indicate compliance with standards by displaying an easily recognizable sticker; (4) provide compulsory training for truck drivers on the dangers of diesel emissions; (5) develop a systems of fines for trucks not complying with emission standards; (6) plant a tree buffer zone between Port and neighborhood; (7) install air monitors; (8) provide funding for creation and maintenance of a new West Oakland park; (9) provide free truck parking away from West Oakland communities; (10) phase-in non diesel alternatives; (11) provide "no truck parking" signs in West Oakland neighborhoods and develop an enforcement program for mitigations needing enforcement; and (12) provide additional shoreline access. 			
Ellen Parkinson	Verbal Comment on 6/13/96	 Supports shoreline park as part of Vision 2000. Do not forget the youth in the community. Proposed a large fishing pier, a nine hole golf course, an Olympic-sized swimming pool, a bowling alley, and a skating rink. Emphasized need for housing and jobs. Concerned about air pollution and street congestion. 			
Roger Schmidt	Verbal Comment on 6/13/96	 Supports Port and its contributions to improvements in the area. Requested improved access to the 7th Street Fishing Pier. Presented some of the suggestions developed during the waterfront charette, such as turning Middle Harbor into a small boat harbor; creating wetlands; extending the Bay Trail to this area; providing access to the area with a light rail system; using fill from dredging operations to expand canals to make breakwaters or create wetlands; and 			
John Geddie	Letter Dated 6/13/96	 employing former navy staff in the recreational areas. Wishes to be included on the mailing list to receive the EIS/EIR. 			

Commentor	Form	Issues
Andrea Dawson, Acumen Building Enterprise	Letter Dated 6/11/96	Wishes to be included on the mailing list to receive the EIS/EIR.

[Federal Register: March 21, 1997 (Volume 62, Number 55)]
[Notices]
[Page 13602]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr21mr97-58]

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Public Hearing for the Joint Draft Environmental Impact Statement/Environment Impact Report (EIS/EIR) for the Disposal and Proposed Reuse of the Fleet and Industrial Supply Center, Oakland, CA

Summary: Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and the California Environmental Quality Act (CEQA) Section 15170, the Department of the Navy, in coordination with the Port of Oakland, has prepared and filed with the U.S. Environmental Protection Agency a joint Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Navy disposal and Port of Oakland reuse of the Navy Fleet and Industrial Supply Center, Oakland (FISCO) property and structures in Oakland, California. The Navy will be the EIS lead agency for the NEPA documentation and the Port of Oakland will be the EIR lead agency for the CEQA documentation. The Federal Highway Administration is a cooperating agency for the EIS and the California Department of Transportation is a responsible agency for the EIR. FISCO is scheduled to close in September 1998 in compliance with the 1995 Base Realignment and Closure (BRAC) directive from Congress. The Draft EIS/EIR addresses the potential impacts to the environment that may result from the disposal of FISCO via special legislation (Public Law 104-106 Section 2867) to the Port of Oakland.

FISCO is within the planning jurisdiction of the Port of Oakland. The Port of Oakland Vision 2000 Program proposes development of ship, railroad, and truck freight handling facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California and an intermodal port of national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The joint EIS/EIR provides a program level analysis supporting both the Navy NEPA requirements to describe potential environmental impacts associated with the property disposal at FISCO, and the Port of Oakland CEQA requirements to analyze environmental impacts of implementing the Vision 2000 Program.

The Draft EIS/EIR evaluates a ``No Action" alternative and four Port of Oakland reuse alternatives. The ``No Action" alternative would result in the federal government indefinitely retaining ownership of the nonreversionary Navy property. Under the ``No Action" alternative, the Navy would continue leasing the property to the Port of Oakland under the existing 50 year lease agreement allowed by Public Law 102-484.

The four reuse alternatives combine the common land use components of a railroad terminal, marine terminals, public waterfront access and marine habitat enhancement. As FISCO is within the Port of Oakland jurisdiction and is designated as a Port Priority use area in the April 1996 San Francisco Bay Conservation and Development Commission and the Metropolitan Transportation Commission Seaport Plan Update, these four alternatives emphasize port-related activities. The Port of Oakland Vision 2000 Program may require additional property outside the FISCO boundary in order to meet the objectives of the Program.

ADDRESSES: The Draft EIS/EIR is available for review at the following public libraries in the vicinity of FISCO: (1) West Oakland Public Library, 1801 Adeline Street, Oakland, CA; (2) Oakland Main Library, 125 14th Street,

Oakland, CA; and (3) Alameda Main Library, 2264 Santa Clara Avenue, Alameda, CA. The Navy will conduct a public hearing on Tuesday, April 8, 1997, at 7:00 p.m., in the West Oakland Library, 1801 Adeline Street, Oakland, California. Federal, state and local agencies, and interested individuals are invited to be present or represented at the hearing. Oral comments will be heard and transcribed by a stenographer. To assure accuracy of the record, all comments should be submitted in writing. All comments, both oral and written, will become part of the public record in the study. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. Longer comments should be summarized at the public hearing and submitted in writing either at the hearing or mailed to the address listed below.

FOR FURTHER INFORMATION CONTACT: All written comments concerning the Draft EIS/EIR must be submitted no later than April 22, 1997 to Mr. Gary J. Munekawa (Code 1852GM), Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone (415) 244-3022, fax (415) 244-3737. For information regarding the Port of Oakland Vision 2000 Program or the Draft EIR, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, California 94607, telephone (510) 272-1181, or fax (510) 465-3755. A limited number of additional Draft EIS/EIR documents are available on request.

Dated: March 18, 1997.

D.E. Koenig,
LCDR, JAGC, USN, Federal Register Liaison Officer.

[FR Doc. 97-7238 Filed 3-20-97; 8:45 am]

BILLING CODE 3810-FF-P

[Federal Register: March 7, 1997 (Volume 62, Number 45)] [Notices]

[Page 10558-10559]

From the Federal Register Online via GPO Access [wais.access.gpo.gov]

[DOCID:fr07mr97-90]

ENVIRONMENTAL PROTECTION AGENCY [ER-FRL-5478-1]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7167 OR (202) 564-7153. Weekly receipt of Environmental Impact Statements Filed February 24, 1997 Through February 28, 1997 Pursuant to 40 CFR 1506.9.

EIS No. 970065, Draft EIS, BLM, CA, Interlakes Special Recreation Management Area Plan, Implementation, Federal and Private Lands Issues, Shasta County, CA, Due: April 21, 1997, Contact: Eric A. Morgan (916) 224-2100.

EIS No. 970066, Draft EIS, FHW, GA, Harry S. Truman Parkway, Construction from the Abercorn Street Extension (GA-204) to Derenne Avenue, COE Section 404 Permit and U.S. Coast Guard Permit, Chatham County, GA, Due: April 21, 1997, Contact: Larry R. Dreihaup (404) 562-3630.

EIS No. 970067, Draft Supplement, BLM, MT, SD, ND, Standards for Rangeland Health and Guidelines for Livestock Grazing Management on Bureau of Land Management Administered Lands, Implementation, MT, ND and SD, Due: May 03, 1997, Contact: Sandy Brooks (406) 255-2929.

EIS No. 970068, Draft EIS, GSA, CO, Denver Federal Center Master Site Plan, Implementation, City of Lakewood, Jefferson County, CO, Due: April 28, 1997, Contact: Lisa Morpurgo (303) 236-7131.

EIS No. 970069, Final EIS, BLM, NV, Denton-Rawhide Mine Expansion Project, Plan of Operation Approval, Implementation, Minerial County, NV, Due: April 07, 1997, Contact: Terri Knutson (702) 885-6156.

EIS No. 970070, Draft EIS, AFS, NH, Waterville Valley Ski Resort Project, Development of Snowmaking Water Impoundments Project, Special-Use-Permits, Dredge and Fill Permit and COE Section 404 Permit, White Mountain National Forest, Pemigewasset Ranger District, Town of Waterville Valley, Grafton County, NH, Due: April 21, 1997, Contact: Jerome E. Perez (802) 767-4261.

EIS No. 970071, Draft EIS, USA, CA, Fleet and Industrial Supply Center/Vision 2000 Maritime Development, Disposal and Reuse, Funding, NPDES Permit, COE Section 10 and 404 Permits, City of Oakland, Alameda County, CA, Due: April 21, 1997, Contact: Gary J. Munekawa (415) 244-3022.

EIS No. 970072, Final EIS, BLM, NM, Roswell Resource Area Management Plan and Carlsbad Resource Area Management Plan Amendment, Implementation, Quay, Curry, DeBaca, Roosevelt, Lincoln, Guadalupe, Chaves, Eddy, and Lea Counties, NM, Due: April 07, 1997, Contact: David Stout (505) 627-0272.

EIS No. 970073, Draft EIS, AFS, AK, Chasina Timber Sale, Harvesting Timber and Road Construction, Tongass National Forest, Craig Ranger District, Ketchikan Administrative Area, AK, Due: April 25, 1997, Contact: Norm Matson (907) 228-6273.

EIS No. 970074, Final EIS, DOE, NV, CA, Sierra Nevada Region 2004 Power Marketing Program, Implementation, 1,480 megawatts (MW) Power from the Central Valley and Washoe Project, NV and CA, Due: April 07, 1997, Contact: Jerry Toenyes (916) 353-4418.

Dated: March 4, 1997.
William D. Dickerson,
Director, NEPA Compliance Division, Office of Federal Activities.
[FR Doc. 97-5703 Filed 3-6-97; 8:45 am]
BILLING CODE 6560-50-U



State of California

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH CHIMENTAL DEP

1400 TENTH STREET SACRAMENTO 95814

97 APR 24 AM : LEE GRISSOM

RECEIVED

April 22, 1997

JAMES MCGRATH PORT OF OAKLAND 530 WATER STREET OAKLAND, CA 94607

Subject: DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY SCH #:

96062010

Dear JAMES MCGRATH:

The State Clearinghouse submitted the above named environmental document to selected state agencies for review. The review period is closed and none of the state agencies have comments. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call Kristen Derscheid at (916) 445-0613 if you have any questions regarding the environmental review process. When contacting the Clearinghouse in this matter, please use the eight-digit State Clearinghouse number so that we may respond promptly.

Sincerely,

ANTERO A. RIVASPLATA

Chief, State Clearinghouse

Entre a Magilata

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PUBLIC HEARING NEWSPAPER ADVERTISEMENTS

The following newspaper advertisement announcing the public hearing to receive oral and written comments concerning the Disposal and Reuse of FISCO/Vision 2000 Maritime Development Draft EIS/EIR and the start of the public comment period was published in the following papers:

San Francisco Chronicle - Sunday, March 30, 1997, and Monday March 31, 1997.

Oakland Tribune - Sunday, March 30, 1997, and Monday March 31, 1997.

Oakland Post - Sunday, March 30, 1997.

NOTICE OF PUBLIC HEARING Joint Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Disposal and Proposed Reuse of the Fieet and Industrial Supply Center, Oakland, CA

7:00 P.M TUESDAY, APRIL 8, 1997 WEST OAKLAND PUBLIC LIBRARY OAKLAND, CALIFORNIA

A public hearing to receive oral and written comments concerning the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) will be held on Tuesday, April 8, 1997, at 7:00 p.m., in the West Oakland Library, 1801 Adeline Street, Oakland, California. Federal, state and local agencies, and interested individuals are invited to be present or represented at the hearing. Oral comments will be heard and transcribed by a stenographer. To assure accuracy of the record, all comments should be submitted in writing. All comments, both oral and written, will become part of the public record in the study. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. Longer comments should be summarized at the public hearing and submitted in writing either at the hearing or mailed to the address listed below.

Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500 — 1508) and the California Environmental Quality Act (CEQA) Section 15170, the Department of the Navy, in coordination with the Port of Oakland, has prepared and filled with the U.S. Environmental Protection Agency a joint Draft EIS/EIR for the Navy disposal and Port of Oakland reuse of the Navy Fleet and Industrial Supply Center, Oakland (FISCO) property and structures in Oakland, California. The Navy will be the EIS lead agency for the NEPA documentation and Port of Oakland will be the EIR lead agency for the EIR, FISCO is scheduled to close in September 1998 in compliance with the 1995 Base Realignment and Closure (BRAC) directive from Congress. The Draft EIS/EIR addresses the potential impacts to the environment that may result from the disposal of FISCO via special legislation (Public Law 104-106 Section 2867) to the Port of Oakland. The Port of Oakland. The Port of Oakland vision 2000 Program proposes development of ship, railroad, and truck freight handling facilities to meet the antic

handling facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California and an Intermodal port of national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement. The Port of Oakland Vision 2000 Program may require additional property outside the FISCO boundary in order to meet the objectives of the Program.

The joint EIS/EIR provides a program level analysis supporting both the Navy NEPA requirements to describe potential environmental impacts associated with the property disposal at FISCO, and the Port of Oakland CEQA requirements to analyze environmental impacts of implementing the Vision 2000 Program.

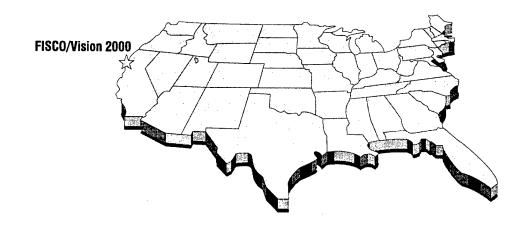
The Draft EIS/EIR evaluates a "No Action" alternative and four Port of Oakland reuse alternatives. The "No Action" alternative would result in the federal government indefinitely retaining ownership of the nonreversionary Navy property. Under the "No Action" alternative, the Navy would continue leasing the property to the Port of Oakland under the existing 50 year lease agreement allowed by Public Law 102-484.

The Draft EIS/EIR is available for review at the following public libraries in the vicinity of FISCO:

The Draft Elsection is admissional of FISCO:
West Oakland Public Library, 1801 Adeline Street, Oakland, CA;
Oakland Main Library, 125 14th Street, Oakland, CA; and
Alameda Main Library, 2264 Santa Clara Avenue, Alameda, CA.
All written comments concerning the Draft EIS/EIR must be submitted no later

All written comments concerning the Draft EIS/EIR must be submitted no later than April 22, 1997 to:

Mr. Gary J. Munekawa (Code 1852GM)
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive, San Bruno, California 94066-5006
Telephone (415) 244-3022, Fax (415) 244-3737
For information regarding the Port of Oakland Vision 2000 Program or the Draft EIR, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, California 94607, telephone (510) 272-1181, or fax (510) 465-3755. A limited number of additional Draft EIS/EIR documents are available on request.



APPENDIX E REGULATORY CONSIDERATIONS

LAND USE	E-1
CULTURAL RESOURCES	E-5
VISUAL RESOURCES	E-6
BIOLOGICAL RESOURCES	E-7
WATER RESOURCES	E-9
GEOLOGY AND SOILS	E-11
TRAFFIC AND CIRCULATION	E-14
Air Quality	E-15
Noise	E-17
UTILITIES	E-19
HAZARDOUS MATERIALS AND WASTE	E-20

Appendix E Regulatory Considerations

E.1. LAND USE

This section identifies land use plans and regulations that affect land use of the site. This includes the Port of Oakland Business and Policy Plan, the City of Oakland Policy Plan, the BCDC and MTC San Francisco Bay Area Seaport Plan, the Airport Land Use Commission (ALUC) of Alameda County Regulations, and the Coastal Zone Management Act (CZMA) regulations.

E.1.1 Port of Oakland Jurisdiction

Under the Charter of the City of Oakland, the Board of Port Commissioners is vested with the complete and exclusive power and duty, for and on behalf of the City of Oakland within the Port area, to exercise regulatory jurisdiction over land uses and other activities related to the Port of Oakland and to take charge and control of all rights and interests of the City in land and water areas (such as FISCO property). FISCO is within the Port area. Under the City Charter, the Board consists of seven Oakland residents appointed for four-year staggered terms by the Oakland City Council upon nomination by the City Mayor. Under the City Charter, the Board's power is subject to the requirement that it develop and use land in the Port area for a purpose in conformity with the City's General Plan. Most of the Port area is subject to the use restrictions of state legislative trust grants to the City of Oakland, which require uses consistent with statewide commerce, navigation and fisheries (Clark, T., August 14, 1996, personal communication).

Most of the Port area consists of land and water areas owned by the City of Oakland and administered by the Board. Most of the City-owned land in the Port Area is leased by the Board to others, with conditions and requirements governed by the relevant lease. With some exceptions, for City-owned land in the Port area, the Board approves only uses related to aviation, maritime, or other commercial uses of statewide import. If the land is owned by third parties, then the Board only approves uses that do not interfere or are not inconsistent with other aviation,

maritime, or commercial uses of City-owned property in Port Area (Clark, T., August 14, 1996, personal communication).

In 1968, a master development plan, commonly referred to as the Shoreline Plan, was adopted by the Port Commissioners by resolution on November 4, 1968, and was amended in 1969 to incorporate the plan and policies into the City of Oakland Comprehensive Plan (Clark, T., August 14, 1996, personal communication). In general, the Port land uses are consistent with the policies of the City of Oakland.

E.1.2 City of Oakland Policy Plan

The City of Oakland Comprehensive Plan serves as the city's general plan. The city is in the process of updating the Comprehensive Plan. Comprehensive Plan policies help set the direction for land use designations, zoning districts, and development standards. The project site is designated for industrial use (Brady and Associates 1994).

The Oakland Policy Plan, a major component of the city's Comprehensive Plan, is the city council's statement of basic goals and policies, and guides its decisions on specific projects and actions. It also guides the actions and programs of city departments and agencies and assists citizens in participating in the policy-making process. Because the Port proposals for reuse of the project site should be consistent with the Oakland policy plan, the following policies should be considered (City of Oakland 1980):

E.1.2.1 General Considerations

Policy on Land Use Decision-making. The applicable policies state "In deciding on major land use issues, the City will seek to consider the full range of direct and indirect economic, social, physical, environmental, and public service factors involved, giving special attention to possible impacts on lower income persons, the elderly, or members of minority groups." And "In considering those land use questions which mostly affect a particular neighborhood or other area, the City will give substantial weight to the opinions of the local citizens."

Policy on Land Use Relating to the Natural Setting. The applicable policies state "Bay fill should be undertaken only upon clear and convincing evidence that its benefits will outweigh its resulting environmental and other costs." And "In the development of shoreline areas, every reasonable effort should be made to provide attractive public access to the water-edge."

Policy on Land Use Relating to Noise. The applicable policy states "To the extent compatible with noise levels and other environmental factors, the intensity of development at each point in the city should be related to the degree of accessibility there."

Policy on Land Use Relating to Urban Design and Preservation. The applicable policy states "Every effort should be made to preserve those older buildings, other

physical features, sites, and areas which have significant historical, architectural, or other special interest or value."

Policies on Land Use Regulations, Mixture, and Transition. The applicable policies state "The City will employ zoning or other land use regulations to ensure that land uses are compatible with their surroundings and to promote appropriate design and on-site conditions for residents or other users." And "The City will see that the applicable land use regulations are compatible with particular desired functions and character, and where appropriate provide for an orderly transition of use type or density over time." And "In areas which now contain a significant mixture of housing and industries, special steps should be taken to mitigate conflicts between these uses."

E.1.2.2 Commercial and Industrial Uses

General Policies. The applicable policies state "The environmental quality of Oakland's commercial and industrial areas should be protected and in many cases greatly improved. Amenities such as street trees and plazas should be added where appropriate to make these areas more desirable shopping or working environments." And "Commercial and industrial areas should have adequate parking and loading facilities."

Policies on Industrial Areas. The applicable policies state "When appropriate, rehabilitation in the form of structural repairs, modernization, improvement, or conversion of buildings, or other facilities, will be financially aided by the City to improve the environmental quality, efficiency, and market potential of industrial areas." And "If the sites of existing military, transportation, or utility uses within the industrial belt become available for reuse in the future, they should generally be used for transportation or, in suitable locations, manufacturing or wholesaling. Special consideration should be given to possible uses that would involve large numbers of jobs or big contributions to the City's tax base." and "Marine and air terminal capacity should be developed with city, regional, and state-wide benefits." and "Industrial areas should be developed and used in such a manner that they do not harm adjacent residential areas."

E.1.2.3 Civic and Open Space Uses

Policies on Civic and Open Space Uses. The applicable policies state "Efforts should be made to increase the total acreage of public parks and recreation areas within the city limits, exclusive of facilities at schools, colleges, and universities, to at least 10 acres for each 1,000 of Oakland's population."

E.1.3 BCDC/MTC San Francisco Bay Area Seaport Plan

The San Francisco Bay Area Seaport Plan is the product of a cooperative planning effort of the Bay Conservation and Development Commission (BCDC) and the Metropolitan Transportation Commission (MTC). The Seaport Plan constitutes the maritime element of MTC's Regional Transportation Plan and BCDC's San Francisco Bay Plan. The Seaport Plan employs land use designations and

enforceable policies that MTC and BCDC use in their funding and regulatory decisions and that local governments use in their land use and regulatory decisions. Areas determined to be necessary for future port development are designated as port priority use areas and are reserved for port-related and other uses that will not impede development of the sites for port purposes. Port priority use areas include marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses, including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers, employee parking, and marine services. Within port use areas, marine terminals are identified, and these sites are reserved specifically for cargo handling operations (BCDC 1996).

The Seaport Plan is being revised to include the FISCO site. MTC has prepared an update that suggests designating the FISCO site as a port priority use area, declaring, "If and when not needed by the Navy, should be developed for port and related industrial uses." The proximity of FISCO to Port of Oakland and railyard facilities makes its shoreline a prime candidate for development as a major seaport facility. The emphasis should be on developing sites in the Oakland Inner Harbor. The update evaluated the FISCO site based on the criteria listed in Table E-1 (MTC 1996).

Table E-1
FISCO Seaport Use Evaluation

Rating	Criteria
Excellent	Compatibility with surrounding land uses
Excellent	Land access to freeways and railyards
Fair	Environmental conditions, especially bay fill requirements
Excellent	Availability of a local sponsor to plan, finance, and manage port
Excellent	Good infrastructure, such as warehouses, truck terminals, and railyards
Excellent	Available land for berth development and freight storage and movement
Excellent	Access by a significant portion of modern fully-loaded container vessels

Source: MTC 1996

E.1.4 Airport Land Use Commission of Alameda County Regulations

The proposed project site is outside the ALUC General Referral Area and safety zones (where no structures are permitted in parts of aircraft flight paths) for NAS Alameda. The proposed project location is also outside the NAS Alameda Air Installation Compatible Use Zone (AICUZ) safety zone. However, part of the property is within the AICUZ Accident Potential Zone 2. In this zone, port facilities, rail lines, and trucking would be permitted so long as the height of occupied structures does not exceed four stories and electronic equipment does not

interfere with flight operations. The maritime and transportation uses of the subject site conform with the ALUC Noise Impact Zone for NAS Alameda.

E.1.5 Coastal Zone Management Act Regulations

The federal Coastal Zone Management Act requires that federal actions be consistent to the maximum extent practicable with federally approved state coastal plans. The San Francisco Bay Plan and Bay Area Seaport Plan are the local coastal plans for the San Francisco Bay. The Navy will comply with any applicable requirements of the Coastal Zone Management Act prior to conveyance of FISCO property.

E.2. CULTURAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing cultural resources.

E.2.1 Federal Laws

Pursuant to the regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Navy is the lead federal agency for the disposal of FISCO. Section 106 of NHPA (16 USC 470f), as amended, and its implementing regulations (36 CFR 800), require federal agencies to consider the effects of their actions on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP). It also requires that agencies provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on actions that will directly or indirectly affect National Register or eligible properties. Generally, a project that will have a "substantial adverse change" on a NRHP-eligible property is regarded as having a significant adverse effect on the environment. The criteria for evaluating NRHP eligibility, the relative significance, of cultural resources are found in 36 CFR 60.4.

Additional responsibilities also are placed on the activity commander or commanding officer pursuant to cultural resources requirements of DOD and the Department of the Navy (DOD Directive 4710.1 of 21 June 1984, Archeological and Historic Resources Management; Department of the Navy OPNAVINST 5090.1B, Historic and Archeological Resources Protection, 1 November 1994, Chapter 23).

E.2.2 State Laws

The principal state law relating to the preservation of historical and archeological properties is that of Appendices G and K of CEQA. CEQA mandates that significant effects to important cultural resources be determined during the project planning stage. Under this law, cultural resources include both prehistoric or historical archeological sites, as well as paleontological resources or properties of historic, cultural, or architectural significance to a community or ethnic or social group.

In addition to CEQA, the California Register Act of 1992, codified in Section 5020 and Section 21083 and 21084 of the Public Resources Code, offers specific guidance for the protection of archeological resources. The California Register of Historical Resources is a listing of significant historical resources in the state, similar to the NRHP at the national level. NRHP-listed or eligible properties are automatically listed in the California Register; therefore, the Navy Supply Center, Oakland Historic District, the Oakland Army Base Historic District, and the Southern Pacific West Oakland Shops Historic District are automatically included within the California Register. PRC 21084 of CEQA provides instructions on the treatment of projects that may result in a "substantial adverse change" to historical properties. Generally, a project that will have a "substantial adverse change" on a California Register property is regarded as having the potential for a significant effect on the environment.

E.3. VISUAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing visual and scenic resources.

E.3.1 City of Oakland Comprehensive Plan

The City of Oakland Comprehensive Plan contains policies in the Land Use Element and Scenic Corridor Element related to visual resources. The policies relevant to the proposed project are as follows:

E.3.1.1 Land Use Element

Policies on Urban Design and Preservation. Policy 1: The city will pursue a continuing comprehensive process of urban design to seize opportunities as they occur and direct physical changes toward a more efficient, more livable, more beautiful, and more dramatic urban environment.

Policy 2: The city will see that all public facilities ... form in the aggregate a logical visible framework that organizes and stimulates private development.

Policy 4: Every effort should be made to preserve those older buildings, other physical features, sites, and areas that have significant historical, architectural, or other special interest or value.

Policies Relating to the Natural Setting. Policy 1: Urban development wherever it occurs should be related sensitively to the natural setting, with the scale and intensity of development in each case bearing a reasonable relationship to the physical characteristics of the site.

E.3.1.2 Open Space, Conservation, and Recreation Element

The Draft Open Space, Conservation and Recreation element of the Oakland General Plan contains policies related to aesthetics and visual resources. Policy OS-2.5, Urban Park Acquisition Criteria, is to increase the amount of urban parkland, placing a priority on land with visual significance. Policy OS-3.2, Military Base

Open Space, calls for designating undeveloped areas with high natural resource or scenic value as Resource Conservation Areas.

E.3.2 BCDC San Francisco Bay Plan

The BCDC Bay Plan contains policies regarding appearance, design, and scenic views, as follows:

Policy 1: To enhance the visual quality of development around the bay and to take maximum advantage of the attractive setting it provides, the shores of the bay should be developed in accordance with the Public Access Design Guidelines and the General Development Guide.

Policy 3: In some areas, a small amount of fill may be allowed if the fill is necessary—and is the minimum absolutely required—to develop the project in accordance with the commission's design recommendations.

Policy 5: To enhance the maritime atmosphere of the Bay Area, ports should be designed, whenever feasible, to permit public access and viewing of port activities by means of (a) view points (e.g., piers, platforms, or towers) and restaurants that would not interfere with port operations and (b) openings between buildings and other site designs that permit views from nearby roads.

Policy 14: Views of the bay from vista points, from roads, and from other areas should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water.

Policy 15: Vista points should be provided in the general locations indicated in the plan maps. Access to vista points should be provided by walkways, trails, or other appropriate means and would connect to the nearest public thoroughfare where parking or public transportation is available. In some cases, exhibits, museums, or markers would be desirable at vista points to explain the value or importance of the areas being viewed.

The San Francisco Bay Plan Map for the project site shows a West Basin of the Jack London Square Marina adjacent to the Howard Terminal, and states that at Jack London Square continuous public access should be provided along the Estuary to the Lake Merritt Channel.

E.4. BIOLOGICAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing biological resources.

E.4.1 Rivers and Harbors Act of 1899 (Section 10)

The US Army Corps of Engineers regulates impacts to navigable waters, making the excavation from or deposition of material into those waters subject to regulation. The Rivers and Harbors Act of 1899 (Section 10) includes the building of structures in, over, or under these waters. A permit must be obtained from the Corps by the Port of Oakland before activities, such as filling, dredging, or construction, could begin in the waters around the project site.

E.4.2 Clean Water Act

The Clean Water Act was enacted to restore and protect the chemical, physical and biological integrity of the Nation's waters. Clean Water Act Section 401 certification requires that permitted projects comply with state water quality standards. The State establishes water quality standards under Section 301 of the Clean Water Act. State certification is a condition of the 401 certification process. State certification is covered under the Porter-Cologne Act.

Clean Water Act Section 404(B)(1) establishes guidelines for the discharge of dredged or fill material. The guidelines are established individually, or in concert with other activity to prevent adverse impacts to the ecosystem. The US Army Corps of Engineers must provide an opportunity for public comment. The guidelines and policies are developed in conjunction with the Environmental Protection Agency (EPA).

E.4.3 Porter-Cologne Water Quality Control Act

The law established a comprehensive program for regulating state water quality and controlling pollution. The organizations responsible for implementing this law include the State Water Resources Control Board and the regional water quality control boards.

E.4.4 Federal Endangered Species Act

Federal law directs that all federal agencies and departments use their authority to preserve endangered and threatened species under the guidance of the Endangered Species Act (16 USC 1531 et seq.). Federal agencies are required to consult with the US Fish and Wildlife Service (USFWS), or US National Marine Fisheries Service (NMFS) for marine species, prior to undertaking actions that may affect endangered species. The biological opinion is normally issued after the USFWS reviews the draft environmental document. Federal agencies are prohibited from enacting activities that would jeopardize the continued existence of these species.

E.4.5 Fish and Wildlife Coordination Act of 1934 (amended in 1958)

The act provides that wildlife conservation receive equal consideration and be coordinated with other features of water resources development. Any federal agency permitting, licensing, or construction of a project involving impoundment, diversion, or deepening of the waters of any stream or other water body must first consult with the Department of Interior (USFWS) and the Department of Commerce (NMFS), as well as the state wildlife resource agency to prevent losses or damages to resources and develop and improve resources in connection with development projects. Recommendations of the Secretary of the Interior must include impacts of the project on wildlife, measures to mitigate or compensate for these impacts, and a description of project features recommended for wildlife

conservation and development. The 1958 amendments to the law authorized the Secretary of the Interior to provide public fishing areas and accept donations of land and funds.

E.4.6 Coastal Zone Management Act: (1972, amended in 1990)

The Costal Zone Management Act (CZMA) of 1972 and subsequent 1990 amendments (16 U.S.C. 1456 et seq.) act provides for coastal management programs by States. BCDC's coastal management program for the San Francisco Bay was approved in 1977 and is based on the McAteer-Petris Act, the Suisun Marsh Preservation Act of 1977, and the Bay Plan.. Federal agencies make consistency determinations regarding proposed federal activities including permits and licenses. BCDC can concur or object to a permit based on it's policies and laws.

E.4.7 California Endangered Species Act

California provides procedures similar to the federal Endangered Species Act for nonfederal projects under the California Endangered Species Act, California Fish and Game Code (Section 2090 et seq.). For example, the California Department of Fish and Game (CDFG) can adopt a federal biological opinion as a state biological opinion under California Fish and Game Code (Section 2095). Upon disposal of FISCO out of federal ownership, it would be subject to these state regulations.

E.5. WATER RESOURCES

Regulations relevant to water resources include the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region's Water Quality Control Plan for the San Francisco Bay Region (RWQCB 1986), and National Pollutant Discharge Elimination System (NPDES) permit requirements for Stormwater Pollution Prevention Programs (SWPPPs) and point source discharges. The US Army Corps of Engineers regulates disposal of dredged materials, as well as placement of fill. The BCDC also regulates bay fill pursuant to the McAteer-Petris Act. In addition, the City of Oakland participates in National Flood Insurance Program (NFIP) of the Federal Emergency Management Agency (FEMA). Upon reuse, the project site would also need to be consistent with flood protection provisions of the Environmental Hazards Element of the City of Oakland's Comprehensive Plan (City of Oakland 1974).

E.5.1 Water Quality

Jurisdiction over water quality is established by the federal Clean Water Act and the state's Porter-Cologne Water Quality Control Act. The US EPA has delegated primary responsibility for water quality control to the California State Water Resources Control Board (SWRCB). This authority is implemented in the Bay Area by the San Francisco RWQCB. The SWRCB and RWQCB jurisdiction covers implementation of the NPDES permitting requirements for discharges from point (e.g., industrial outfall discharges) and nonpoint (e.g., stormwater runoff) sources of water pollutants. Pursuant to Section 319 of the Clean Water Act, the state has the lead role in identifying and controlling nonpoint sources of

pollution. The RWQCB implements the NPDES program through the issuance of permits for construction and industrial discharges.

The RWQCB also regulates water quality in accordance with state laws and policies identified in the San Francisco Basin Plan. This plan identifies beneficial uses of surface and ground waters, wetlands, and marshes and sets forth water quality objectives to protect the beneficial uses. Beneficial uses for central San Francisco Bay include industrial uses, processing, navigation, contact and noncontact recreation, fishing, commercial uses, wildlife habitat, species preservation, and fisheries habitat (RWQCB 1986, as amended). NPDES permit effluent discharge limitations are structured to achieve regional compliance with Basin Plan beneficial uses.

Urban runoff discharges are regulated under NPDES Permit Regulations for Stormwater Discharges, which are enforced by the RWQCB. Stormwater discharges relevant to the Port of Oakland are regulated in two categories, construction discharges and industrial discharges. The California SWRCB has issued a Statewide General Permit for Industrial Stormwater Discharges that covers non-point discharges from specific industries that apply and qualify for inclusion under the State General Permit. The General Permit does not include all discharges except for construction discharges. To be covered under the State's General Permit, dischargers must submit a Notice of Intent (NOI) to the Board.

At the Port, tenants with activities regulated under the General Permit submit individual NOIs to the SWRCB. The Port itself has not submitted a NOI for its marine terminals operations because the Port does not operate any activities regulated by the General Permit in the marine terminal area. In order to assist its tenants and others in complying with stormwater permit regulations, the Port has organized a working group to prepare a stormwater monitoring program. The Port also provides assistance to its tenants in the preparation of the required SWPPP as well as the application of best management practices (BMPs). Although the Port is developing the SWPPPs and BMPs for the marine terminals, the tenants are responsible for submitting NOIs to the SWRCB. No NOIs have been submitted for uses on the Port's recently leased potion of FISCO; however, NOIs for regulated uses on that property may be submitted in the near future (Herman, D., May 13, 1996, personal communication).

Construction activities at the project site that would result in the cumulative disturbance of over five acres of soil would be subject to measures required by the General Permit for Stormwater Discharges Associated with Construction Activities. Industrial wastewater discharges from point sources would be subject to RWQCB Waste Discharge Requirement permits.

FISCO currently complies with the Statewide General Permit for Industrial Stormwater Discharges through an NOI that covers the entire base as a single industrial site. The permit includes a SWPPP that includes existing and proposed BMPs. The Navy has prepared a stormwater sampling and analysis program for review by the RWQCB and has been preparing its annual reports since 1992. As part of that program, water is tested twice annually between October and April; periodic inspections also are conducted (Wong, P., May 22, 1996, personal communication).

E.5.2 Fill and Dredging

The US Army Corps of Engineers has jurisdiction over certain structures or work in or affecting navigable waters of the US pursuant to section 10 of the Rivers and Harbors Act of 1899. The US Army Corps of Engineers also regulates discharge of dredge or fill materials pursuant to Section 404 of the Clean Water Act. The BCDC has regulatory authority over non-federal filling operations in the bay and inland within a 100-foot shoreline band from the line of high tide. The RWQCB regulates dredging and dredge material disposal as it relates to water quality. Future maintenance dredging also could be regulated under the Marine Protection, Research, and Sanctuaries Act to the extent that dredge materials are disposed of in the ocean.

US EPA, Region 9, US Army Corps of Engineers, San Francisco District, BCDC, RWQCB, and California SWRCB have been preparing a Long-term Management Strategy (LTMS) for the placement of dredged material in the San Francisco Bay Region. That study is intended to identify long-term solutions to the problem of regional dredge material disposal for a 50-year planning period. It is estimated that an average of 300 million cubic yards per year of dredge materials will require disposal through the planning period. The LTMS includes provisions for disposal, rehandling, and reuse of dredge material in both construction and fill activities. After the LTMS is adopted, the Port may elect to follow LTMS regional dredge disposal approaches or may identify its own dredge disposal site(s).

E.5.3 Flooding

Flood protection for nonfederal lands is administered by FEMA under the NFIP. Participating communities must implement specific flood plain management measures to reduce flood risks to new development. The necessary measures are developed on the basis of Flood Insurance Studies (FIS), which result in the preparation of Flood Insurance Rate Maps (FIRMs). Although FISCO is not under the NFIP, the City of Oakland is a participating community, and the site would be under the NFIP upon conveyance of jurisdiction to the Port. The most recent FIS and associated FIRMs prepared for the city did not include analysis of flood hazards within FISCO (FEMA 1982). The city's environmental hazard's element, flood hazard policies 1 and 3, provide relevant guidance regarding floodplain protection (City of Oakland 1974).

E.6. GEOLOGY AND SOILS

The following is a brief summary of relevant plans, policies, and regulations governing geology and soils.

E.6.1 State of California

The California Code of Regulations (CCR), Title 24, Part 2, also known as the California Building Code (CBC), contains the enforceable state building standards. These regulations are promulgated by the Division of the State Architect/Structural Safety Section, and the Office of Statewide Health Planning and Development. The California Building Standards Commission is responsible for coordinating all building standards in California. The City of Oakland Department of Public Works is responsible for enforcing these standards within the city.

The project site is located within seismic Zone 4, the highest seismic classification defined in the CBC. CBC seismic standards represent minimum requirements for new construction within Zone 4, a region in which the effective peak ground acceleration assumed in design calculations is 0.5g. In areas in which effective peak ground accelerations are likely to be greater than 0.5g, the minimum CBC requirements may not be adequate. The CBC defines two alternative methods for calculating design seismic forces— a static procedure and a dynamic procedure. The dynamic procedure allows for a site-specific determination of the structural design requirements, based on geologic, tectonic, seismologic, and soil characteristics associated with the site and is required for certain classes of structures.

The CBC (Section 1629A.2) requires that every structure have sufficient ductility and strength to undergo the displacement caused by the "upper bound earthquake" motion without collapse. The upper bound earthquake ground motion is defined as the motion having a 10 percent probability of being exceeded in a 100-year period or maximum level of motion that may ever be expected at the building site within the known geological framework.

Under the Alquist-Priolo Earthquake Fault Zoning Act, the California Division of Mines and Geology has delineated seismic zones that are deemed to be "sufficiently active and well-defined as to constitute a potential hazard to structures from surface faulting or fault creep." The state geologist is also required to review continually new geologic and seismic data and to revise the earthquake fault zones or to delineate new zones based on new information. No active faults have been identified within the property boundaries of the project site. The nearest delineated active fault zone is the Hayward Fault, located approximately five miles east of the project site. The delineated San Andreas Fault is approximately 15 miles west of the site. The delineated Calaveras Fault is located approximately 15 miles to the east.

E.6.2 City of Oakland

The Health and Safety Element of the City of Oakland General Plan (1991) requires that a soils and geologic report be submitted to the Department of Public Works prior to issue of all building permits to evaluate the potential for lateral spreading, liquefaction, differential settlement, and other types of ground failures.

It requires all structures of three or more stories to be supported on pile foundations that penetrate Bay Mud deposits and to be anchored in firm noncompressible materials, unless geotechnical findings indicate a more appropriate design. It also provides for the identification and evaluation of existing structural hazards and abatement of those hazards to acceptable levels of risk.

E.6.3 Port of Oakland

The Port of Oakland has adopted wharf design criteria to be used in design, construction, reconstruction, or repair of all existing and future wharf structures, except in the event that current engineering practice requires adjustments or modification of the wharf design criteria (Port Wharf Design Guidelines Ordinance No. 2972). The General Engineering Design Criteria include the following geotechnical standards:

- 1(d) A sufficiently deep cutoff wall or other means shall be provided along the back of the wharf to prevent erosion of yard materials by tidal, wave, or other action under the wharf.
- 1(e) The slope beneath the wharf shall be protected from erosion by placement of riprap or by other means, as recommended by a geotechnical consultant.
- 1(f) The dike or cut slope beneath the wharf shall be designed to withstand the same seismic forces as the wharf structure. It shall contain the soil behind the slope under the design earthquake loading.
- 1(g) Flexible connections shall be provided where utilities pass from the yard through the cutoff wall or other rigid structure at the back of the wharf.
- 2(c) The seismic loads shall be based on site response spectral curves developed by geotechnical consultants taking into account the effects of earthquakes on the two major faults in the vicinity of the wharf structure (San Andreas and Hayward) as well as other faults in the region.

E.6.4 Bay Conservation and Development Commission

The San Francisco Bay Plan (BCDC 1992) includes policies regarding the placement of fill for earthquake safety. Policy 1 states that the commission has appointed the Engineering Criteria Review Board, consisting of geologists, civil engineers specializing in soils engineering, structural engineers, and architects competent to and adequately empowered to (a) establish and revise safety criteria for bay fills and structures thereon; (b) review all except minor projects for the adequacy of their specific safety provisions and make recommendations concerning these provisions; (c) prescribe an inspection system to assure placement of fill according to approved designs; and (d) gather and make available performance data developed from specific projects. These activities would complement the functions of local building departments and local planning departments, none of which are presently staffed to provide soils inspections.

E.7. TRAFFIC AND CIRCULATION

The following is a brief summary of relevant plans, policies, and regulations governing traffic and circulation.

E.7.1 US Department of Transportation

The Federal Highway Administration is the agency of the Department of Transportation responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary state highway network. Federal Highway Administration funding is provided through the Intermodal Surface Transportation Efficiency Act of 1991 for which this project (Vision 2000) qualifies. This act's legislation can be used to fund local transportation improvement projects, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

E.7.2 California Department of Transportation

Caltrans is responsible for the planning, design, construction, and maintenance of all state highways. Caltrans jurisdictional interest would extend to improvements to roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements would be subject to review by Caltrans staff and the California Transportation Commission.

E.7.3 Metropolitan Transportation Commission

The Metropolitan Transportation Commission is the regional organization responsible for prioritizing transportation projects in a Regional Transportation Improvement Program for federal and state funding. The process is based on evaluating each project for need, feasibility, and adherence to the Intermodal Surface Transportation Efficiency Act policies and congestion management program. The congestion management program requires that each jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level and provide mitigation where future growth degrades that service level.

E.7.4 Alameda County Congestion Management Agency

The Alameda County Congestion Management Agency (CMA) is responsible for ensuring local government conformance with the congestion management plan, a seven-year program aimed at reducing traffic congestion. The CMA has review responsibility for proposed development projects that are expected to generate 100 more PM peak hour trips than otherwise would occur. The CMA reviews the adequacy of CEQA analyses and measures proposed to mitigate impacts. The CMA maintains a county-wide transportation model and has approval authority for the use of any local or subarea transportation models.

E.7.5 City of Oakland

The City has designated certain container truck routes that allow carriage of axle weights higher than typically allowed on other public streets without special

permits. Permitted container routes include 7th Street, Middle Harbor Road, Maritime Street and Third Street east of Middle Harbor Road.

The City of Oakland has placed a heavy truck (over 4.5 tons) restriction on I-580 between Grand Avenue and 106th Avenue. Truck traffic to and from the project site must use alternative roadways.

E.8. AIR QUALITY

The following is a brief summary of relevant plans, policies, and regulations governing air quality.

E.8.1 Federal Requirements

The federal Clean Air Act requires each state to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce federal air quality standards throughout the state. These plans must be submitted to and approved by EPA. In California, the state implementation plan consists of separate elements for different regions of the state. SIP elements are generally developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated.

Local councils of governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the San Francisco Bay region, SIP document preparation has been a coordinated effort involving three regional agencies: the Bay Area Air Quality Management District (BAAQMD), the Association of Bay Area Governments (ABAG), and the Metropolitan Transportation Commission (MTC).

The federal Clean Air Act imposes deadlines for achieving the federal ambient air quality standards. The San Francisco Bay Area was recently reclassified from a moderate nonattainment area to an attainment/maintenance area for the federal ozone standard. The urbanized portions of the San Francisco Bay Area are presently categorized as moderate nonattainment areas for the federal carbon monoxide standards. The Bay Area is currently not classified for the federal PM₁₀ standard.

The California Air Resources Board (CARB) believes that monitoring data demonstrate that the San Francisco Bay Area has achieved the federal carbon monoxide and PM₁₀ standards, and has requested that redesignation to attainment status for both pollutants. Final EPA action on the carbon monoxide and PM₁₀ redesignation requests is expected to occur within the next year.

E.8.2 State Requirements

The California Clean Air Act of 1988 requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur

dioxide and nitrogen dioxide. CARB is responsible for developing a plan for meeting state PM₁₀ standards.

The California Clean Air Act does not set specific deadlines for achieving state air quality standards. Instead, attainment is required "as expeditiously as practicable", with various emission control program requirements based on the attainment status for ozone and carbon monoxide standards. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the state ozone standard. The Bay Area is also classified as a nonattainment area for the state PM₁₀ standard. The entire San Francisco Bay Area is currently classified as an attainment area for the state carbon monoxide standards.

Air pollution control programs were established in California prior to the enactment of federal requirements. Responsibility for air quality management programs in California is divided between CARB as the primary state air quality management agency and air pollution control districts as the primary local air quality management agencies. Federal Clean Air Act legislation in the 1970s resulted in a gradual merger of local and federal air quality programs, particularly industrial source air quality permit programs.

E.8.3 Air Quality Permits

Many types of industrial and commercial facilities require air quality permits for their equipment and operations. The BAAQMD has the primary air quality permit authority throughout the San Francisco Bay Area. Permit authority is derived from a combination of state and federal legislation, and can be categorized into construction or installation authorizations for individual pieces of equipment and permits for continued operation of equipment and facilities.

In general, federally required air quality permit programs have been integrated into the pre-existing state and local permit program. This results in a two-step permit process for new emission sources: an initial authority to construct (ATC) permit and a subsequent permit to operate (PTO).

E.8.4 Federal Clean Air Act Conformity Process

Section 176(c) of the Clean Air Act requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the Clean Air Act and with federally enforceable air quality management plans. EPA has promulgated separate rules that establish conformity analysis procedures for transportation-related actions and for other (general) federal agency actions. Transportation conformity requirements apply to actions funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). General conformity requirements are potentially applicable to most other federal agency actions, but apply only to those aspects of an action that involve on-going federal agency responsibility and control over direct or indirect sources of air pollutant emissions. The conformity review process is intended to ensure that federal agency actions:

- Will not cause or contribute to new violations of any federal ambient air quality standards.
- Will not increase the frequency or severity of any existing violations of federal ambient air quality standards, and
- Will not delay the timely attainment of federal ambient air quality standards.

The transportation conformity rule applies primarily to highway construction projects and mass transit system projects. Harbor and railroad development projects generally are not subject to transportation conformity requirements (Tannehill, September 25, 1996, personal communication).

The EPA general conformity rule applies to most federal actions occurring in nonattainment or maintenance areas (such as the San Francisco Bay area) when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The federal nonattainment and maintenance pollutants subject to conformity analyses in the San Francisco Bay area include ozone precursors (reactive organic compounds and nitrogen oxides) and carbon monoxide. Applicable threshold levels for federal actions in the San Francisco Bay Area are 100 tons per year of reactive organic compounds, 100 tons per year of nitrogen oxides, and 100 tons per year of carbon monoxide.

Several categories of federal agency actions are exempted from the EPA general conformity rule because they are presumed to have federally controllable emissions below the threshold level. Transfers of ownership, interests, and titles in land, facilities, real property, or personal property to other public agencies or to private parties are among the actions exempted from conformity determination requirements. Lease arrangements, however, may be subject to the requirements of the conformity rule if the terms of the lease allow federal agencies to control the leasee's emission-generating activities.

E.9. Noise

Various federal, state, and local agencies have developed guidelines for evaluating land use compatibility under different noise level ranges.

E.9.1 Federal Agency Guidelines

The federal Noise Control Act of 1972 (P. L. 92-574) established a requirement that all federal agencies must comply with applicable federal, state, interstate, and local noise control regulations. Federal agencies also were directed to administer their programs in a manner that promotes an environment free from noise that jeopardizes public health or welfare.

The Department of Defense evaluates the acceptability of noise levels at military installations according to three noise level zones—community noise equivalent

(CNEL) levels below 65 dB (Zone 1), CNEL levels of 65-75 dB (Zone 2), and CNEL levels above 75 dB (Zone 3). All land uses are considered compatible with Zone 1 noise levels. Industrial, office, and commercial uses are generally compatible with Zone 2 noise levels. Educational and residential land uses are not compatible with Zone 2 noise levels unless special acoustic treatments and designs are used to ensure acceptable interior noise levels. Residential and educational land uses are not compatible with Zone 3 noise levels. Industrial and manufacturing land uses may be acceptable in Zone 3 areas if special building designs and other measures are implemented.

A 1985 Air Installation Compatible Use Zone study update for NAS Alameda, located across the Oakland Inner Harbor from FISCO, identified areas of the FISCO, Port of Oakland, and Southern Pacific railyard properties as falling within Zone 2 (US Navy 1985). A small area in the southwest portion of the FISCO site fell within Zone 3 (US Navy 1985). Portions of Treasure Island, Yerba Buena Island, and the City of Oakland also fell within these boundaries. These zones were derived using 1983 NAS Alameda aircraft operations data. Since aircraft types and the number of operations have changed since that time, these zones may no longer be accurate. All military aircraft ceased operations at NAS Alameda in mid-1996; however, this base is still used periodically by commercial air craft.

E.9.2 State Agency Guidelines

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures. These standards require that hotels, motels, and multiple-unit dwellings be constructed so that outdoor noise sources will not cause interior noise levels to exceed an annual average CNEL value of 45 decibels with the windows closed.

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes various outdoor CNEL ranges into as many as four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use.

The state noise element guidelines chart identifies normally acceptable noise levels for low density residential uses as CNEL values below 60 decibels. The normally acceptable range for high density residential uses is identified as CNEL values below 65 decibels. For educational and medical facilities, CNEL values of 60 to 70 decibels are identified as conditionally acceptable. For office and commercial land uses, CNEL values of 67.5 to 77.5 decibels are categorized as conditionally acceptable.

E.9.3 Local Noise Policies

The noise element of the Oakland Comprehensive Plan contains a general policy to prevent or reduce exposure to excessive or annoying noise. Policy recommendations in the noise element urge a serious consideration of noise impacts in the planning and design of new or expanded roadways, with incorporation of noise mitigation, such as depressed roadway and noise barriers, where feasible. Other transportation policy recommendations include the use of roadway designs that discourage through traffic on local streets and neighborhood designs that encourage pedestrian and bicycle use. Land use policy recommendations include using buffer areas (including off-street parking, greenbelts, or general commercial areas) to protect residential areas from activities that produce excessive noise, odors, or traffic.

In June 1996 the City of Oakland adopted new noise ordinance provisions for the Oakland Municipal Code and Oakland Planning Code (Ordinances 11893, 11894, and 11895). Appendix K provides a simplified summary of noise limits contained in various sections of the Oakland noise ordinances. Different sections of the ordinances use different noise measurement units as formal limits. Some sections reference maximum allowable noise levels while others specify a pattern of noise level exceedance limits. Other sections set time limits for the operation of specified noise sources without specifying numerical noise limits. To the extent possible, the various provisions have been converted into equivalent average noise level values that are more easily summarized and compared within Figure K-1 in Appendix K.

E.10. UTILITIES

Navy and DOD regulations outlined in the Navy's Environmental and Natural Resource Program Manual govern the operation of ships at sea.

E.10.1 Water Distribution System

The Safe Drinking Water Act outlines sampling for lead and copper in drinking water. The Navy's Environmental and Natural Resource Program Manual identifies requirements and responsibilities for the protection of drinking water supplies at Naval installations.

E.10.2 Sanitary Sewer System

NPDES permit requirements apply to the discharge of wastewater to the sanitary sewer.

E.10.3 Stormwater System

The stormwater system operates under a NPDES, Statewide General Industrial Storm Water Discharge Permit. Specifics of the stormwater monitoring program are discussed in Section 3.7 (Water Resources). Stormwater is not treated prior to discharge to San Francisco Bay.

E.10.4 Solid Waste Management

The Solid Waste Disposal Act of 1965, as amended by the Resource Conservation and Recovery Act (RCRA) in 1976, requires that federal facilities comply with all federal, state, interstate and local requirements regarding the disposal and management of solid waste. RCRA establishes public safety and health standards for the disposal of solid waste, including requirements for landfill liners and leachate collection and treatment. RCRA and the Military Construction Codification Act of 1982 also provide for various means of recovering value from solid waste. Wastes may be recycled, reclaimed, used as a fuel supplement, or sold for profit.

California AB 939 requires California counties to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. California Senate Bill (SB) 1223 establishes state programs designed to increase recycling and to encourage the development of commercial markets for recyclable materials. In general, the state places the burden of action and responsibility on the county to meet the state requirements.

Coast Guard regulations require privately-owned vessels to dispose of garbage three miles out to sea or contain it while in port. No plastics may be dumped at sea or in port.

E.11. HAZARDOUS MATERIALS AND WASTE

The following is a brief discussion of the major federal laws and regulations that apply to hazardous materials and waste at the project site.

E.11.1 Resource Conservation and Recovery Act

In response to the need to more closely regulate the ongoing handling, storage, transportation, and disposal of hazardous wastes, the US Congress passed RCRA in 1976. RCRA presents the federal regulations for the operation of hazardous waste storage, treatment, and disposal sites. Prior to RCRA, the state of California had passed the Hazardous Waste Control Law (HWCL) in 1972. This law provides regulations that equal or exceed the federal standards set by RCRA for hazardous waste management. The state of California was given "interim authorization" to implement RCRA under through enforcement of the HWCL. Final authorization for the state to implement RCRA was given in 1993. The responsible agency for enforcement of RCRA and HWCL is Cal EPA's Department Of Toxic Substance Control (DTSC).

E.11.2 Comprehensive Environmental Response, Compensation, and Liability Act

Originally passed in 1980, CERCLA created national policies and procedures to identify and remediate sites previously contaminated by the release of hazardous substances. CERCLA formalized the process for identification of sites and the prioritization for the cleanup of sites through the National Contingency Plan (NCP). The NCP contains criteria for the evaluation of sites that provide the basis for the preliminary assessment and site inspection. The evaluation that results in a

priority ranking of the site that determines whether it should be placed on the National Priority List (NPL). Facilities placed on the NPL are commonly referred to as "Superfund" sites. As noted previously, FISCO is not on the NPL.

E.11.3 Community Environmental Response Facilitation Act

Congress amended CERCLA in 1992 through the passage of CERFA. The purpose of CERFA is to expedite the identification of uncontaminated real property, within closing federal facilities, which offers the greatest opportunity for reuse and redevelopment. Uncontaminated or "CERFA-eligible" property is defined as any real property on which no hazardous substances and no petroleum products were stored for one year or more, known to have been released, or disposed. CERFA also provided clarification as to when "all remedial action has been taken." CERFA defined that all remedial action has been taken if construction and installation of an approved remedial design has been completed and the remedy has been demonstrated to the Administrator to be operating properly and successfully. The carrying out of long-term pumping and treating, or operation and maintenance, after the remedy has been demonstrated to the administrator to be operating properly and successfully does not preclude the transfer of the property.

Identification of uncontaminated properties at FISCO is the responsibility of the Navy. EPA is the regulatory authority for enforcement of CERCLA, including the CERFA amendments. However, the EPA has joined with Cal EPA in the implementation of CERFA for DOD facilities in California. Cal EPA serves as the lead agency for closures of military bases, including FISCO, not listed in the NPL. Cal EPA generally follows EPA guidance for CERCLA sites.

For properties that cannot qualify as "CERFA-eligible," the CERFA law specifies that the deed for the transfer of subject property shall include a covenant warranting that all remediation necessary to protect human health and the environment with respect to any hazardous substance remaining on the property has been taken prior to the date of transfer and that any response action or corrective action found to be necessary after the date of transfer shall be conducted by the United States.

Properties that contain or potentially contain contamination cannot be transferred prior to environmental remediation. However, the DOD has established a policy for lease of these properties. The DOD with regulatory participation can develop a site-specific or supplemental environmental baseline survey, or in specific cases use the base-wide EBS and a finding of suitability to lease (FOSL) or finding of suitability to transfer (FOST) for the property. The FOSL may include specific land use restrictions to protect human health and the environment, and to ensure government access for final investigations and remediation. A FOST may be issued only for properties on which all remedial actions necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken (pursuant to CERCLA 120(h)(3)).

E.11.4 Aboveground and Underground Storage Tank Regulations

ASTs and USTs are subject to regulation by federal, state, and local agencies. Public agencies involved in the implementation and enforcement of AST and UST regulations are:

- EPA, Region IX, San Francisco, California
- State Water Resources Control Board, Sacramento, California
- California Air Resources Board, Sacramento, California
- Regional Water Quality Control Board, Oakland, California
- Bay Area Air Quality Management District, San Francisco, California
- Alameda County Environmental Health Dept., Oakland, California
- Oakland Fire Department

California has a cooperative agreement with EPA (1991) to implement AST and UST regulations through the SWRCB. California in turn delegates authority to county and city agencies for local implementation and enforcement of AST and UST regulations. The ACEHD are the local agencies responsible for the implementation and enforcement of AST, UST and hazardous materials regulations. The BAAQMD is responsible for the implementation and enforcement of air quality regulations in Alameda County. The OFD is responsible for enforcing the UFC as they apply to hazardous materials and tanks.

E.11.4.1 Federal Regulations

EPA issued final regulations in 40 CFR Parts 280 and 281, regarding USTs containing petroleum products and hazardous substances on September 23, 1988. The specific goals of the federal UST regulations are to: (1) prevent and detect UST leaks and spills; (2) correct environmental impacts resulting from UST leaks and spills; (3) assure UST owners and operators can pay for UST contamination; and (4) assure each state has an UST regulatory program that is at least as stringent as the federal regulations. The regulations that may apply to USTs are the following:

- Code of Federal Regulations (CFR), Title 40, Section 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks;
- 40 CFR 109, Criteria for State, Local, and Regional Oil Removal Contingency Plan;
- 40 CFR 112, Oil Pollution Prevention (Spill Prevention Control and Countermeasures;
- 40 CFR 113, Liability Limits for Small Onshore Storage Facilities;
- 40 CFR 114, Civil Penalties for Violation of Oil Pollution Prevention Regulations; and

Clean Air Act (CAA), 55 Federal Register, revised 1990.

E.11.4.2 Spill Prevention Control and Countermeasure (SPCC) Plan

Federal regulations for the prevention of and response to spills from storage tanks, include those facilities with an aggregate UST storage quantity of 42,000-gallons, or 1,320-gallon in AST storage or 660-gallons in one AST. These regulations are contained in Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112). In general, 40 CFR 112 outlines the requirements for facilities required to prepare a SPCC Plan, which includes a description of the UST facility, identifies potential spill hazards, discusses the current prevention procedures and personnel training and makes recommendations for corrective actions.

E.11.4.3 State Regulations

The state of California has adopted more stringent set of UST and AST regulations than those of the federal government. These tank regulations outline, the reporting, monitoring, closure, and tank system requirements for USTs and ASTs. The following state laws and regulations are applicable for regulating USTs and ASTs:

- California Health and Safety Code (CHSC), Division 20, Chapter 6.7, Sections 25280 through 25299.7 Underground Storage of Hazardous Substances, October 1990;
- CHSC, Chapter 6.5, Sections 25250 through 25250.25 Management of Used Oil;
- California Code of Regulations (CCR), Title 23 Waters, Division 3
 State Water Resources Control Board, Chapter 16 Underground Tank
 Regulations, May 5, 1994;.
- CCR, Title 22, Division 4.5, Chapter 12, Standards Applicable to Generators of Hazardous Wastes; and
- CCR, Title 22, Division 4.5, Chapter 15, Interim Status for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities.

E.11.4.4 Local Fire Department Requirements

The local fire department enforces the tank regulations set forth in the CCR and the regulations pertaining to human and environmental protection in the Uniform Fire Code (UFC) (1994 edition), particularly Articles 52 and 79, for the construction, installation, operation, and closure of ASTs and USTs storing flammable and combustible materials. In addition, the local fire enforce local and state regulations in the California Fire Code and California Fire Code Standards and any local ordinance pertaining to the fire code.

E.11.5 Hazardous Waste Generator and Storage Regulations

Business that generates and stores hazardous waste are require to file hazardous waste contingency and business plans set forth in the state hazardous waste program, as specified in, CCR, Title 22, Division 4.5, Chapter 12, Standards Applicable to Generators of Hazardous Waste and Chapter 15 Interim Status Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage and Disposal Facilities. These regulation outline the requirements for pretransportation and accumulation of wastes, personnel training, preparedness and prevention, contingency plan and emergency procedures and tank systems requirements.

E.11.6 Asbestos Regulations

Removal of asbestos containing material (ACM) is regulated by EPA, Occupational Safety And Health Administration (OSHA), and the state of California. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the Clean Air Act, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP regulations address the demolition or renovation of buildings with ACM. The Toxic Substances Control Act (TSCA) and the Asbestos Hazardous Emergency Response Act (AHERA) provide the regulatory basis for handling ACM in school buildings. AHERA and OSHA regulations cover worker protection for employees who work around or remediate ACM.

Renovation or demolition of buildings with ACM has the potential to release asbestos fibers into the air. Asbestos fibers could be released due to disturbance or damage of various building materials, such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other materials used for soundproofing or insulation. Only friable ACM, such as those listed above, are considered a health risk. Nonfriable ACM, such as transite piping, shingles, or floor tile, are not a health risk unless they are mechanically abraded in such a way as to produce dust.

E.11.7 Lead Paint Regulations

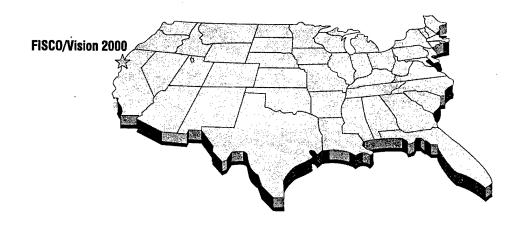
In 1992, Congress enacted the Residential Lead-based Paint Hazard Reduction Act of 1992, Title X of the Housing & Community Development Act (Public Law No. 102-550). As part of Title X, Congress amended the 1971 Lead-based Paint Poisoning Prevention Act (42 USC Section 4801-4846) and added a new Title IV to the Toxic Substance Control Act. Under this law, certain federally owned housing constructed prior to 1960 must be inspected for lead-based paint and lead-based paint hazards must be abated. Federal owned housing constructed after 1969 and before 1978 must be inspected for lead-based paint hazards and the data disclosed to prospective purchasers (42 USC Section 4822). The act also requires disclosure of lead-based paint hazard information.

E.11.8 PCB Regulations

The disposal of these PCBs is regulated under TSCA, which banned the manufacture and distribution of PCBs except for PCBs used in enclosed systems.

By definition, PCB equipment contains PCB concentrations of 500 parts per million (ppm) or more, whereas PCB-contaminated equipment contains PCB concentrations of 50 ppm or greater but less than 500 ppm. The EPA, under TSCA, regulates the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment. Primary federal regulations for controlling existing PCBs are found at 40 CFR Part 761. California regulations are more stringent than their federal equivalents and are found at California Code of Regulations Title 22. Within California, a waste fluid containing five ppm PCBs or more is regulated as hazardous.

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APPENDIX F SOCIOECONOMICS

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Appendix F Socioeconomics

This Appendix presents information on existing socioeconomic conditions within the region of influence at several geographic levels. First, an overview of regional characteristics is provided for the three counties (Alameda, Contra Costa, and San Francisco) most likely to be affected by the project. For context, a brief description of conditions in the nine-county Bay Area as a whole also is provided. Then a description of citywide characteristics is provided for the City of Oakland, the jurisdiction in which the project is located. Finally, information on community-specific characteristics is provided for the West Oakland neighborhood, located south of Highway 80 and west of Highway 980.

Information about regional socioeconomic conditions provides a context for understanding the project site. Although workers may commute to the project site from other parts of the Bay Area, the majority of the Port of Oakland workforce lives in Alameda, Contra Costa, and San Francisco counties. According to the Local and Regional Economic Impact of the Port of Oakland, approximately 80 percent of the port employees reside in this three-county region, and within this region, more workers reside in Oakland than in any other city (O'Connell 1991). Oakland is also the jurisdiction in which the project is located. The community characteristics of West Oakland are described in detail because this area is closest to the project site. In addition, West Oakland has a predominantly poor minority population, making the evaluation of environmental justice considerations an important component of the socioeconomic impact analysis.

Major topics addressed in this section include population, income, employment, housing, and environmental justice. The base year used in describing existing conditions is 1990. This is the year of the latest US Census and the year for which data are most consistently available. Other primary data sources include the Association of Bay Area Governments (ABAG), State Economic Development Department (EDD), State Department of Finance (DOF), the US Navy, the Port

of Oakland (Port), the City of Oakland, and the Coalition for West Oakland Revitalization (CWOR).

F.1 POPULATION

This section describes the population growth that occurred throughout the region between 1980 and 1990, based on US census data. Population projections for 2010, based on estimates prepared by ABAG, also are provided. Population increases and rates of change are summarized on Table F-1 and are discussed in each subsection below. Table F-2 presents information on the racial characteristics of the population in each geographic area. This information also is discussed and compared in the sections below.

Table F-1
Regional Population Trends and Projections
1980, 1990, and 2010

Area	1980	1990	1980-1990 % Change	2010	1990-2010 % Change
Bay Area	5,179,759	6,020,147	+16.2	7,539,600	+25.2
Alameda County	1,105,379	1,276,702	+15.5	1,547,000	+21.2
Contra Costa County	656,380	803,732	+22.4	1,104,700	+37.4
City and County of San Francisco	678,974	723,959	+6.6	819,000	+13.1
City of Oakland	339,337	372,242	+9.7	406,600	+9.2
West Oakland	21,130	24,188	+14.5	NA	NA

Source: ABAG Projections 1994. 1980 and 1990 US Census.

F.1.1 Regional Overview

Population in the nine-county Bay Area increased 16 percent between 1980 and 1990, reaching just over six million. ABAG projects that the region's population will exceed 7.5 million by 2010. This represents a slower rate of growth than was experienced in the 1980's—an average annual increase of 1.26 percent, compared with a 1.62 percent average annual increase between 1980 and 1990. Alameda, Contra Costa, and San Francisco Counties contain nearly half (47 percent) of the total population of the Bay Area.

In 1990, the racial composition of the Bay Area's population was approximately 69 percent Caucasian, nine percent African American, less than 1 percent Native American, 15 percent Asian, and six percent of other racial origins. Persons of Hispanic origin made up 15 percent of the population. Between 1980 and 1990, the racial makeup of the regional population remained relatively constant, except that the proportion of Caucasians decreased (from 76 to 69 percent), while the percent of Asians increased (from 9 to 15 percent). The percentage of persons of Hispanic

origin also increased, from 12 to 15 percent. The percentage of the regional population comprised of African Americans remained constant.

Table F-2 Regional Racial Composition Trends, 1980 and 1990

	Percent of Total Population					
		African-	Native			Hispanio
Area	Caucasian	American	American	Asian	Other	Origin
Bay Area						
1980	76.1	9.0	0.7	8.9	5.3	12.2
1990	68.9	8.9	0.6	15.3	6.4	14.9
Alameda County						
1980	67.9	18.4	0.7	7.8	6.1	11.8
1990	59.6	17.9	0.7	15.1	6.8	14.2
Contra Costa County						
1980	81.5	9.2	0.6	4.7	4.1	8.5
1990	<i>7</i> 6.0	9.3	0.7	9.6	4.5	11.4
City and County of San Francisco						
1980	58.2	12.7	0.5	21.7	6.8	12.3
1990	53.6	10.9	0.5	29.1	5.9	13.9
City of Oakland						
1980	38.2	46.9	0.6	7.8	6.4	9.6
1990	32.5	43.9	0.6	14.8	8.3	13.9
West Oakland						
1980	6.7	86.6	0.3	2.7	3.8	4.6
1990	9.3	75.6	0.5	9.1	5.7	8.8

Source: 1980 and 1990 US Census.

F.1.2 Alameda County

In 1990, Alameda County was the second most populous county in the Bay Area, after Santa Clara County, and it was the only county in the nine-county region to have four cities with populations of more than 100,000 residents— namely Oakland, Fremont, Hayward, and Berkeley. The county's population increased by more than 15 percent between 1980 and 1990, and it is projected to increase by an additional 21 percent between 1990 and 2010. Most of the projected growth, however, will occur in the Livermore/Amador Valley, which is expected to experience extremely high growth rates during this period. This eastern portion of the county includes the communities of Dublin, Livermore, and Pleasanton. Growth in the western portion of the county, which includes Oakland, is expected to be quite slow during this period, with the exception of Emeryville. While Emeryville is expected to attract more than 4,000 new residents, for a population increase of 72 percent, the populations of Oakland, Berkeley, Alameda, and

Albany all are expected to increase by less than 10 percent over the 20-year period. The Association of Bay Area Governments (ABAG) Projections '94 states that population growth in these areas is projected to be minimal since "much of western Alameda County is expected to reach buildout by the year 2000, especially along the bay plain" (ABAG 1993).

Of the approximately 1.28 million people living in Alameda County in 1990, approximately 60 percent were Caucasian, 18 percent were African American, less than one percent were Native American, 15 percent were Asian, and seven percent were of other racial origins. In addition, 14 percent of Alameda County residents identified themselves as being of Hispanic origin. The racial composition of Alameda county is different from that of the Bay Area as a whole. The percentage of Caucasian residents in the County is lower, while the percentage of African American residents is twice as high as it is in the region. The percentages of other racial groups are comparable to those found in the region. As in the region, the percentage of Caucasians in Alameda County has declined since 1980, while the percentage of African Americans has held steady, and the percentage of Asians has increased.

F.1.3 Contra Costa County

Contra Costa County's population increased by 22 percent between 1980 and 1990. This was the third highest rate of growth for any county in the Bay Area, behind Solano and Sonoma Counties. ABAG projects that population growth in Contra Costa County will increase by an additional 37 percent between 1990 and 2010.

Census data indicate that in 1990, the county's population was approximately 76 percent Caucasian, nine percent African American, less than one percent Native American, 10 percent Asian, and five percent persons of other racial origins. Persons of Hispanic origin made up about 11 percent of the county's population in 1990. The percentage of Caucasian residents in the county is higher than that of the region, and the percentage of Asians is lower. The percentage of Caucasian Contra Costa County residents has decreased since the 1980 census, while the percentages of all other racial groups have increased. Most groups had only slight increases, except for Asians, whose proportion of the total population doubled during the decade.

F.1.4 City and County of San Francisco

The City and County of San Francisco's population increased by less than 7 percent between 1980 and 1990. This was the second slowest rate of growth for any county in the Bay Area, above only Marin County, and only a fraction of the state of California's 25.7 percent growth rate for this same period (EDD 1994). ABAG projects that population growth will continue to be slow between 1990 and 2010. San Francisco's population is projected to increase by 13 percent during the 20-year forecast period, reaching 819,000 in 2010. By then, the city will have

only 11 percent of the region's population, compared to 13 percent in 1980 and 12 percent in 1990.

Census data indicate that in 1990 the city's population was approximately 54 percent Caucasian, 11 percent African American, less than one percent Native American, 29 percent Asian and six percent of other racial origins. Persons of Hispanic origin made up 14 percent of the city's population. The percentage of Caucasian residents in the city is lower than in the region, while the percentage of Asians is more than double the region's. The percentages of both Caucasian and African American San Francisco residents have decreased since the 1980 census, while the percentages of Hispanic and Asian residents have increased.

F.1.5 City of Oakland

According to US Census data, the City of Oakland's population increased by almost 10 percent between 1980 and 1990. Oakland contained the largest population in Alameda County in 1990, and it is ranked as the third most populous city in the region (ABAG 1993). ABAG projects that Oakland's population will increase by an additional nine percent between 1990 and 2010. This rate of increase for the 20-year period, however, is less than half the growth rate experienced during the 1980s.

In 1980, Oakland's population was 38 percent Caucasian, 47 percent African American, less than one percent Native American, eight percent Asian, and six percent of other racial origins. Almost 10 percent of the city's residents identified themselves as being of Hispanic origin. In 1990, the percentages of Oakland's Caucsasian and African American populations declined to 33 percent and 44 percent, respectively, while the Native American population remained less than one percent. Over the same period, the city's Asian population nearly doubled, to 15 percent, while persons of other racial origins increased slightly, to eight percent. The percentage of persons of Hispanic origin also increased, from 10 to 14 percent in 1990.

F.1.6 West Oakland

Sixteen census tracts (4014 through 4027) lie within West Oakland, which is located south of Highway 80, west of Highway 980, north of the Oakland Estuary, and east of San Francisco Bay in the City of Oakland. The population of this community increased from 21,130 in 1980 to 24,188 in 1990, for a rate of growth that was about fifty percent higher than Oakland's overall growth rate for the same period.

West Oakland has had a long history of being a racially and culturally diverse community. In the early 1900s, the population was mostly Irish, but there were also large numbers of Chinese and Portuguese settlers, as well as a small core of African Americans who were families of Pullman porters who had moved there to be close to the railroad terminus. During World War II, many more African

Americans settled in West Oakland to work at the Kaiser shipyards. Many chose to stay even after the war ended and industrial activity declined (CWOR 1994).

Census data indicate that West Oakland's racial composition changed substantially between 1980 and 1990. While the absolute number of African Americans decreased very slightly during this period (from 18,278 in 1980 to 18,262 in 1990), the percentage of the community's population represented by this group decreased substantially, from 87 percent in 1980 to 76 percent in 1990. All other racial groups increased both in number and percentage.

The racial composition of West Oakland is distinctly different from that of the City of Oakland as a whole, as well as that of the region. More than three-quarters of West Oakland's population is African American, compared with 44 percent citywide and nine percent in the region. The second largest racial group is Caucasians, at nine percent, compared with 33 percent citywide and 69 percent regionwide. West Oakland's proportions of Asian and Hispanic residents are considerably lower than both the city's and the region's, although these segments of the population are growing.

F.1.7 Income

This section describes income characteristics in terms of mean household income, per capita income, and the percentage of persons living below the poverty level. Table F-3 presents mean household income and per capita income information, as reported by the US Census in 1980 and 1990. This table provides a basis for comparing data aggregated for the census tracts in West Oakland with other regional data. Table F-3 also provides data on the percentage of persons living below poverty level for each geographic location.

F.1.8 Regional Overview

According to US Census data, per capita income in the region more than doubled between 1980 and 1990, increasing from \$9,369 to \$19,716 (Table F-3). The percentage of persons living below the poverty level declined slightly over the decade, from 8.9 to 8.5. While the mean household income in the region more than doubled between 1980 and 1990, ABAG estimates the real increase at 24 percent, adjusted for inflation. ABAG notes that a substantial portion of this increase in household income came from an increase in the number of workers per household, rather than increased individual earnings. Recessionary forces have seriously weakened income growth in the region during the 1990s.

F.1.9 Alameda County

The mean household income in Alameda County more than doubled, from \$21,773 in 1980 to \$45,995 in 1990 (Table F-4). Adjusted for inflation, however, the mean household income rose only 23 percent during this period (ABAG 1993). According to US Census data, the per capita income in the county was \$17,547 in 1990. The percentage of the population living below the poverty level decreased slightly, from 11.3 percent in 1980 to 10.6 percent in 1990.

Table F-3
Regional Income and Poverty Level Trends,
1980 and 1990

	Mean Household	•	Percentage of Persons
Area	Income	Per Capita Income	below Poverty Level
Bay Area			
1980	24,304	\$ 9,369	8.9
1990	52,082	19,716	8.5
Alameda County			
1980	21,773	8,537	11.3
1990	45,995	17,547	10.6
Contra Costa County			
1980	26,539	9,823	7.6
1990	55,033	20,748	7.3
City and County of San Francisco			
1980	20,552	9,265	13.7
1990	45,664	19,695	12.7
City of Oakland		•	
1980	17,970	<i>7,7</i> 01	18.5
1990	37,100	14,676	18.8
West Oakland			
1980	9,986	4,083	33.1
1990	21,940	7,763	36.4

Source: US Census, 1980 and 1990.

F.1.10 Contra Costa County

In 1990, households in Contra Costa County had a mean household income of \$55,033, more than double the mean in 1980 (Table F-3). Adjusted for inflation, the increase in the mean household income was only 19 percent. According to US Census data, the per capita income in the county was \$20,748, more than double the county's 1980 per capita income of \$9,823 (Table F-4). While the number of persons living below the poverty level increased by 8,781 between 1980 and 1990, the proportion of the county's population below the poverty level remained relatively constant (7.3 percent in 1990, compared with 7.6 percent in 1980).

F.1.11 City and County of San Francisco

The mean household income in San Francisco in 1990 was \$45,664, compared with \$20,552 in 1980 (Table F-3). Adjusted for inflation, this increase was 34 percent over the decade (ABAG 1993). According to US Census data, the per capita income in San Francisco was \$19,675 in 1990, more than double the per capita income of \$9,265 in 1980. The percentage of persons living below the poverty level declined slightly, from 13.7 percent to 12.7 percent.

Table F-4
Regional Labor Force, Civilian Employment and Unemployment,
1980 and 1990

Area	No. of Persons 16 and Over	No. in Labor Force	% in Labor Force	No. of Civilians in Labor Force	No. of Civilians Employed	% of Unemployed
Alamada Causan						
Alameda County	044.054	5/0.040				
1980	866,056	560,012	64.7	552,621	514,727	6.9
1990	1,005,755	689,517	68.6	676,896	635,840	6.1
Contra Costa County						
1980	500,757	326,530	65.2	324,216	305,313	5.8
1990	622,157	430,746	69.2	429,902	406,507	5.0
City and County of San Francisco	•					
1980	579,408	370,497	63.9	364,689	342,484	6.1
1990	620,818	417,147	67.2	412,385	386,530	6.3
City of Oakland						
1980	267,635	159,355	59.5	157,519	142,699	9.4
1990	288,543	181,419	62.9	179,513	162,488	9.5
West Oakland						
1980	15,652	6,536	41.8	6,257	4,875	22.1
1990	17,262	8,453	49.0	7,519	6,042	19.6

Source: US Census, 1980 and 1990.

F.1.12 City of Oakland

The mean household income in Oakland in 1990, was \$37,100, more than double the 1980 figure of \$17,970 (Table F-3). ABAG estimates the real increase as 20 percent, adjusted for inflation (ABAG 1993). Oakland's per capita income in 1990 was \$14,676, an increase of 90 percent from 1980, when the per capita income was \$7,701. Unlike the region and the other two counties, the percentage of persons living below poverty in Oakland rose between 1980 and 1990, from 18.5 percent to 18.8 percent. The percentage of persons living below the poverty level in Oakland is more than double the regionwide percentage.

F.1.13 West Oakland

Income statistics for West Oakland reveal it as a very poor community, relative to the rest of the City of Oakland, Alameda County, and the region. The mean household income more than doubled between 1980 and 1990, but it remained more than 40 percent below the citywide mean household income and less than half the countywide mean (Table F-3). Per capita income rose 90 percent between 1980 and 1990, from \$4,083 to \$7,763. This was roughly half the citywide per capita income and one-third the countywide per capita income. In West Oakland, as in the City of Oakland as a whole, both the number and percentage of persons living in poverty increased between 1980 and 1990, but West Oakland's percentage increased more markedly, from 33.1 percent in 1980 to 36.4 percent in 1990. This

is almost double the citywide percentage of persons living below poverty, and it is more than four times the 8.5 percent found regionwide.

F.1.14 Employment

This section provides information on labor force, unemployment rates and employment by industry. The first subsection below provides an overview of employment trends by sector for the nine-county Bay Area. Subsequent sections describe labor force participation rates, the number of persons employed, unemployment rates and employment by sector for the each of the three counties, the City of Oakland, and West Oakland. A discussion of FISCO and Port-related employment is included in the West Oakland section.

F.1.15 Regional Overview

The nine counties that comprise the Bay Area share a diversified and interconnected regional economy. San Francisco has served as a major financial and commercial center for the region, while the East Bay counties have attracted considerable industrial and manufacturing growth. Economic growth in the region was very strong from the 1940s until the mid-1970s. Since then, economic growth has slowed and the region has experienced several recessions. ABAG predicts that job growth from 1990 to 2010 will continue to be slow, relative to previous decades, and that the decentralization of jobs away from San Francisco to outlying suburbs will continue. Since 1980, the percentage of jobs in the services and retail trade sectors has been growing, while jobs in manufacturing and government have been shrinking. These trends are also expected to continue to 2010 (ABAG 1993).

Employed residents and unemployment. The number of employed Bay Area residents increased from 2.5 million in 1980 to 3.1 million in 1990, an increase of 24 percent. Employment growth is expected to slow considerably between 1990 and 2010, however, due mainly to the recession experienced in the 1990s. Over the 20-year forecast period, the number of employed residents in the region is expected to increase to 3.9 million by 2010, for an increase of about 23 percent. The rate of growth in the number of employed residents during these two decades, therefore, will be less than the growth rate that took place during the single decade between 1980 and 1990 (ABAG 1993).

Unemployment rates in the nine Bay Area counties, as calculated by California's Economic Development Division, ranged from 2.7 percent in Marin County to 5.6 percent in Solano County in 1990. Unemployment rates in the three-county region were in the middle of this range—4.2 percent in Alameda County, 4.3 percent in Contra Costa County, and 4.0 percent in San Francisco County, compared with the statewide unemployment rate of 5.6 percent. Unemployment is calculated by EDD using an economic model, resulting in unemployment rates that are different from (and lower than) the civilian unemployment rates reported by the US Census (Champlain 1996). Table F-4 shows unemployment rates derived from the census, so that comparisons can be drawn between West Oakland and the rest of the region.

Employment by sector. Table F-5 provides an overview of employment by selected industries for the three-county region, for the City of Oakland, and for West Oakland in 1990. As indicated on the table, the US Census for that year presents data for seven industrial sectors. All areas share a generally consistent pattern in the proportion of employed residents by sector. Nearly half of the three-county region's employed persons (46 percent) work in two of the industrial sectors, professional and related services (25 percent) and wholesale and retail trade (21 percent). These are followed, in descending order, by manufacturing, 13 percent; fire, insurance, and real estate (FIRE), nine percent; transportation, communications, and utilities - 9 percent; business and repair services, six percent; and construction, six percent.

F.1.16 Alameda County

Employed residents and unemployment. The number of employed Alameda County residents increased by 24 percent between 1980 and 1990. Growth in the number of employed residents is expected to slow considerably between 1990 and 2010, however, with the number of employed persons projected to increase by 20 percent over the 20-year period. The cities expected to experience the greatest increases in the number of employed residents during these two decades are Oakland, Livermore, Dublin, and Pleasanton (ABAG 1993).

As shown on Table F-4, 69 percent of persons 16 and over living in Alameda County were in the labor force in 1990, an increase from 65 percent in 1980. Alameda County's civilian unemployment rate in 1990 was 6.1 percent, down from 6.9 percent in 1980.

Employment by sector. Table F-5 includes a breakdown of employment by industrial sector in Alameda County in 1990, as reported by the US Census. The highest percentage of residents (46 percent) were employed in two sectors, the professional and related services sector (25 percent), and the wholesale and retail trade sector (21 percent). The lowest percentage of residents were employed in the Construction sector (six percent). The percentages of county residents employed in other industrial sectors were manufacturing, 16 percent; transportation, communications, and utilities, nine percent; FIRE, seven percent; and business and repair services, six percent.

F.1.17 Contra Costa County

Employed residents and unemployment. Table F-4 summarizes labor force and employment trends in Contra Costa County. The number of employed Contra Costa County residents increased by 33 percent between 1980 and 1990. This was considerably higher than the 24 percent growth rate of employed persons in the Bay Area as a whole. Growth in the number of employed residents is expected to slow between 1990 and 2010, with a 38 percent increase projected for the 20-year forecast period. This growth rate projection nevertheless is higher than the 23 percent increase projected for the Bay Area as a whole between 1990 and 2010.

Table F-5 Number of Employed Residents by Selected Industries, 1990

Area	Employed Persons 16 and Over	Construction	Manufacturing	Transportation, Communications and Other Utilities	Wholesale and Retail Trade	Fire, Insurance and Real Estate	Business and Repair Services	Professional and Related Services
Alameda County	635,840	36,508	100,180	56,626	130,601	47,121	38,561	161,248
Contra Costa County	406,507	31,543	47,056	34,150	84,165	46,217	23,068	96,243
City and County of San Francisco	386,530	16,620	35,748	31,418	80,990	41,617	27,292	105,373
City of Oakland	162,488	8,492	17,284	14,668	30,258	12,130	10,793	47,659
West Oakland	6,042	326	591	277	1,180	251	499	1,671

Source: 1980 and 1990 US Census.

As shown in Table F-4, 69 percent of persons 16 years or over living in the county were in the labor force in 1990, an increase from 65 percent in 1980. Contra Costa County's civilian unemployment rate in 1990 was 5.0 percent, down from 5.8 percent in 1980.

Employment by sector. As shown on Table F-5, the highest percentage of Contra Costa County residents in 1990 were employed in the professional and related services sector (24 percent), and the wholesale and retail trade sector (21 percent). Fewer residents were employed in manufacturing, 11.6 percent; FIRE, -11.4 percent; transportation, communications, and utilities, 8.4 percent; construction -7.8 percent; and services, six percent.

F.1.18 City and County of San Francisco

Employed residents and unemployment. The number of employed residents in the City and County of San Francisco increased 13 percent between 1980 and 1990 (Table F-4). Over the next two decades, the rate of growth is expected to be slower, with the number of employed residents projected to increase by only 13 percent over the 20-year period (ABAG 1993).

As shown on Table F-4, 67 percent of persons 16 and over living in San Francisco were in the labor force in 1990, compared with 64 percent in 1980. The civilian unemployment rate for the City and County of San Francisco was 6.3 percent in 1990, compared with a rate of 6.1 percent in 1980.

Employment by sector. In 1980, the highest percentage of San Francisco residents were employed in the professional and related services sector (27 percent), and wholesale and retail trade sector (21 percent), and the smallest percentage were employed in the construction sector (four percent). Of the remaining industrial sectors, 11 percent were employed in the FIRE sector, nine percent in manufacturing, eight percent in transportation, communications and utilities, and seven percent in business and repair services (Table F-5).

F.1.19 City of Oakland

Employed residents and unemployment. As indicated on Table F-4, the City of Oakland experienced a relatively low rate of growth in employment between 1980 and 1990, about 14 percent. Between 1990 and 2010, the employment growth rate for Oakland is projected to drop substantially lower than the growth rates for Alameda County and the three-county region as a whole during the same period. This projection reflects job losses due to the severe economic slowdown in California between 1990 and 1995, combined with the effects of military base closures (ABAG 1993).

As shown on Table F-4, 63 percent of persons 16 and over living in Oakland were in the labor force in 1990, compared with 60 percent in 1980. The City of Oakland's civilian unemployment rate in 1990 was 9.5 percent. This rate was substantially higher than those of Alameda County and the region.

Employment by sector. As shown on Table F-5, the distribution of employed Oakland residents among the selected industrial sectors generally conforms to the distribution within the three-county region as a whole. professional and related services employ the most residents, 29 percent, followed by wholesale and retail trade, at 19 percent. The Construction industry employs the lowest percentage of residents, five percent. Other sectors are manufacturing, 11 percent; transportation, communications and utilities, nine percent; FIRE, eight percent; and business and repair services, seven percent.

F.1.20 West Oakland

Employed residents and unemployment. West Oakland had proportionately fewer residents in the labor force compared with other parts of the region in both 1980 and 1990 (Table F-3). Less than half (49 percent) of persons 16 and over in West Oakland were in the labor force. This represented a substantial increase since 1980, when the proportion was 42 percent, but it is considerably lower than the percentages of persons in the labor force in Oakland (63 percent) and the three counties (67-69 percent) in 1990. The percentage of unemployed persons in West Oakland was 19.6 percent in 1990, down from 22.1 percent in 1980.

Employment by sector. As shown on Table F-5, the pattern of employment of West Oakland residents is similar to that of Oakland and the region, with a slightly greater proportion of residents employed in the transportation, communications and other utilities and business and repair services sectors. professional and related services employed the highest percentage of West Oakland residents (28 percent). This was followed by wholesale and retail trade - 20 percent; manufacturing, 10 percent; transportation, communications and other utilities, 10 percent; business and repair services, eight percent; construction, five percent; and FIRE, four percent.

Port of Oakland. According to the Port of Oakland Maritime Economic Impact Study, maritime activity related to the Port employed 6,694 persons in 1990. Table F-6 shows the number of employees by type. The largest percentage of jobs were in trucking (23 percent), government (15 percent), and warehousing (14 percent). Almost three-fourths of these workers lived in the three-county region, and more than 18 percent lived in Oakland in 1990 (Port of Oakland 1990).

This maritime activity at the Port generated more than \$220 million in personal income from direct jobs alone in 1990. The Port estimates that the direct jobs at its maritime facilities supported an additional 2,900 induced jobs in the region as a result of maritime industry worker spending, for a total of almost 10,000 jobs. In addition, Port activities indirectly support a wide variety of other types of businesses, such as importers and exporters, throughout the region.

Table F-6
Employment Related to Maritime Activity at the Port of Oakland, 1990

Employment Sectors	Number of Employees	Percent
Railroad	570	8.5%
Trucking	1,549	23.1%
Terminal employees	411	6.1%
ILWU (longshore)	562	8.4%
Towing	31	0.5%
Pilots	12	0.2%
Agents	472	7.1%
Surveyors/chandlers	30	0.4%
Forwarders	558	8.3%
Warehousing	924	13.8%
Container repair/storage	29	0.4%
Government/military	993	14.8%
Marine construction/shipyards	148	2.2%
Barge	27	0.4%
Shippers/consignees	100	1.5%
Port of Oakland staff	202	3.0%
Banking/insurance	75	1.1%
Total direct jobs	6,694	100.0%

Source: Port of Oakland, 1996.

FISCO. An estimated 5,591 workers were directly employed at FISCO facilities in 1990. These included 3,265 workers at shore facilities, plus 2,326 personnel associated with ships homeported at FISCO. Almost all of these jobs (5,327 or 95 percent) were located on FISCO parcels 4 and 5. Assuming the same multiplier for these jobs as for the Port's maritime jobs, these direct jobs would have supported an additional 2,422 jobs, for a total of over 8,000 jobs.

F.2 Housing

This section provides information on housing supply and housing costs in the project vicinity and the region. Table F-7 presents an overview of regional housing characteristics and trends, based on 1980 and 1990 US Census data. The table and narrative discussion include information on housing trends and vacancy rates for West Oakland, as well as for the City of Oakland, the three counties, and the region.

Table F-7
Regional Housing Characteristics and Trends, 1980 and 1990

	No. of		Median Value- Owner-Occupied	
Area	Housing Units	Vacancy Rate	House	Median Rent
Bay Area				
1980	2,061,343	4.2	\$ 98,100	\$ 285
1990	2,365,323	5.0	255,476	690
Alameda County				
1980	444,607	4.1	84,900	240
1990	504,109	4.9	225,300	626
Contra Costa County	•			
1980	251,951	4.0	94,300	266
1990	316,170	5.0	219,400	613
City and County of San Francisco				
1980	316,608	5.7	103,900	266
1990	328,471	7.0	298,900	613
City of Oakland				
1980	150,274	5.7	66,600	202
1990	154,737	6.6	117,400	485
West Oakland				
1980	9,666	11.7	35,921	126
1990	9,866	12.0	101,871	323

Source: 1980 and 1990 US Census.

F.2.1 Regional Overview

The housing stock in the nine-county Bay Area increased by approximately 15 percent between 1980 and 1990, reaching almost 2.4 million units. Almost half of the region's housing units are located in three counties— Alameda, Contra Costa, and San Francisco. The housing vacancy rate in the Bay Area as a whole was 5.0 percent in 1990, with a 3.2 percent vacancy rate for units that were actually available for sale and for rent.

Of the occupied housing units in the region in 1990, 56 percent were owner-occupied, and 44 percent were renter-occupied. The median rent in the Bay Area was \$690 in 1990. The median value of an owner-occupied unit was \$255,476. Between 1980 and 1990, the median value of a home in the Bay Area increased by more than 160 percent.

F.2.2 Alameda County

There were just over 500,000 housing units in Alameda County in 1990. The county's housing stock had increased by 13 percent since 1980, adding about 60,000 new housing units. Of the total housing units in the county in 1990, 4.9

percent were vacant. The vacancy rate for units available for rent and for sale was 3.0 percent.

The owner-occupancy rate in the county in 1990 was 53 percent. The median rent in Alameda County was \$626. The median home value was \$225,300. Home values increased by more than 165 percent from 1980, when the median home value in the county was \$84,900.

F.2.3 Contra Costa County

Contra Costa County's housing stock increased 26 percent between 1980 and 1990 (Table F-7). The vacancy rate for the total housing stock was 5.0 percent, up from 4.0 percent in 1980. The vacancy rate for units actually available for sale and for rent was 3.2 percent.

In 1990, 64 percent of Contra Costa's housing units were owner-occupied. The median value of owner-occupied homes was \$219,400. This reflects an increase of 133 percent from the 1980 median value of \$94,300. Nonetheless, this value is the lowest of the three counties, which may account for the higher rate of owner occupancy. The median rent was \$613 in 1990, compared to \$266 in 1980.

F.2.4 City and County of San Francisco

San Francisco had 328,471 housing units in 1990. The city's housing stock had increased by only four percent since 1980, reflecting the relative scarcity and high cost of land available for residential development, as well as the continuing suburbanization of the region. The vacancy rate in the city in 1990 was 7.0 percent, up from 5.7 percent in 1980. The vacancy rate for units actually available for sale and for rent, however, was 4.3 percent.

In 1990, 35 percent of homes were owner-occupied. This is considerably below the regionwide rate of 56 percent and reflects San Francisco's high housing costs relative to the rest of the region. The median value of an owner-occupied unit in 1990 was \$298,900, a 188 percent increase from 1980, when the median value was \$103,900. Median rent in San Francisco was \$613 in 1990, compared to \$266 in 1980.

F.2.5 City of Oakland

There were 154,737 housing units in Oakland in 1990. The city's housing stock had increased by only three percent since 1980, when there were 150,274 housing units. This slow rate of increase reflects the fact that Oakland's residential land is mostly built out. Of the total number of housing units in the city in 1990, 5.7 percent were vacant. This rate was slightly higher than Alameda County's vacancy rate of 4.9 percent. The vacancy rate for units in the city actually available for rent and for sale was 4.2 percent.

The owner-occupancy rate in the City of Oakland in 1990 was 39 percent, considerably lower than Alameda County's overall owner occupancy rate of 53

percent. The median rent was \$485, and the median value of an owner occupied home was \$117,400. Home values increased by 76 percent between 1980 and 1990. This is less than half the percentage increase experienced regionwide.

F.2.6 West Oakland

West Oakland contained almost 10,000 housing units in 1990. The local housing stock had increased only two percent between 1980 and 1990. Of the total housing units in West Oakland in 1990, 12.0 percent were vacant, more than double the 5.7 vacancy rate for the city. The vacancy rate for units in the area actually available for rent and for sale in 1990 was 6.7 percent.

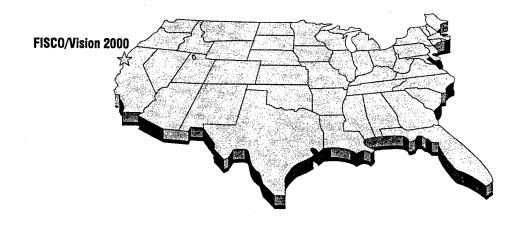
The owner-occupancy rate in West Oakland in 1990 was 18 percent—only half the citywide and one-third the regionwide owner-occupancy rate. This reflects the large number of public housing units in West Oakland. There are more than 1,000 units of government-sponsored housing in the community. Most of these are concentrated in the Campbell Village, Acorn, and Oak Center projects (CWOR 1994).

In 1990, the median rent in West Oakland was \$323 and the median value of an owner-occupied home was \$101,871. Home values increased by 184 percent from 1980, when the median value was \$35,921. West Oakland's housing stock is some of the oldest in the city. Many of the structures are not up to code or lack adequate heating or plumbing. CWOR reports that West Oakland contains 1,359 vacant and boarded up structures, which represents about 14 percent of all housing in the community. At the same time, the neighborhood's proximity to downtown Oakland has begun attracting a new population, which has raised fears about gentrification pressures (CWOR 1994).

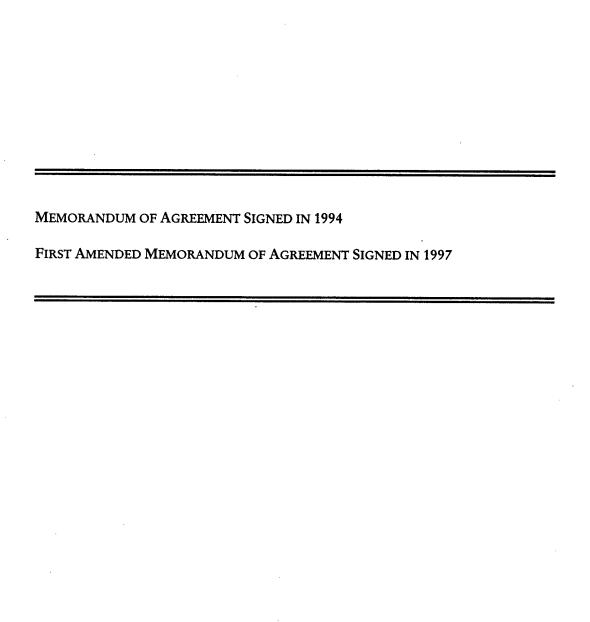
F.2.7 FISCO

There are three units of housing on FISCO that house Navy personnel: Quarters A (Buildings 324), Quarters B (Buildings 325), and Quarters C (Buildings 323). These three units are located on the block bounded by 3rd Street, E Street, 4th Street, and G street in the northern portion of FISCO.

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APPENDIX G CULTURAL RESOURCES



MEMORANDUM OF AGREEMENT SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION PURSUANT TO 36 CFR SECTION 800.6(a)

WHEREAS, the Department of the Navy (Navy) has determined that the leasing of approximately 220 acres of the Fleet Industrial Supply Center (FISC), Oakland, California, (the undertaking) will have an effect on the Naval Supply Center Oakland Historic District, a property eligible for inclusion in the National Register of Historic Places, and has consulted with the California State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Port of Oakland participated in the consultation and has been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, the Navy and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The Navy and the Port of Oakland will ensure that the following measures are carried out:

- 1. Prior to the demolition of any of the buildings on the land to be leased to the Port of Oakland (Phases I III, Exhibit 1), the Navy shall contact the Office of National Register Programs, Western Region, National Park Service (NPS), 600 Harrison Street, Suite 600, San Francisco, California to determine what level and kind of recordation is required for the property. Unless otherwise agreed to by NPS, the Navy shall ensure that all documentation is completed and accepted by the Historic American Buildings Survey, NPS, prior to the demolition, and that copies of this documentation are made available to the SHPO and appropriate local archives designated by the SHPO.
- 2. By January 1, 1998 the Navy will prepare and initiate implementation of a Historic and Archeological Resources Protection (HARP) Plan in consultation with the SHPO, for those portions of the Naval Supply Center Oakland Historic District that will not be leased to the Port of Oakland and will nominate to the National Register of Historic Places, as required by Section 110(a)(2) of the National Historic Preservation Act, as amended, those remaining portions of the Naval Supply Center Oakland Historic District that appear to qualify.
- 3. The Navy, through FISC Oakland Public Affairs Officer, will allow for guided tours of the Naval Supply Center Oakland Historic District for interested community groups upon request on such terms and conditions as the Commanding Officer of FISC Oakland determines are compatible with the security and operation of the facility.

MEMORANDUM OF AGREEMENT

Naval Supply Center Oakland Historic District

Navy Lease to Port of Oakland

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- 4. The Port of Oakland will publicize tours of the Naval Supply Center Oakland Historic District and arrange for trained docents to lead the tours.
- 5. The Port of Oakland will phase demolition of the historic buildings on the property it leases from the Navy at FISC Oakland. Buildings will be demolished only after HABS recordation is complete and an approved sublease for use of the land occupied by the building(s) requires its (their) removal.
- 6. The Navy will provide the Pacific Locomotive Association, Inc., a non-profit corporation, railroad track for use on the Niles Canyon Railway, a historical railroad museum from the rail car marshaling yard of Naval Supply Center Oakland Historic District.
- 7. The Port of Oakland agrees to carry out the obligations set forth in its letter of July 11, 1994 to the Oakland Landmarks Preservation Advisory Board attached hereto as Exhibit 2. The Navy will make a vigorous effort to obtain Legacy or other funding in Fiscal Year 1995 pursuant to the Department of Defense Appropriations Act of 1991 (PL 101-511) et seq. to assist the Port with the obligations assumed by the Port in Exhibit 2. Except for the aforementioned effort to obtain funding, the Navy assumes no obligations or responsibilities with respect to the provisions of Exhibit 2.
- 8. Should the SHPO object within 30 days to any proposals of the HARP Plan for FISC Oakland prepared pursuant to this Memorandum of Agreement, the Navy shall consult with the SHPO to resolve the objection. If the Navy determines that the objection cannot be resolved, the Navy shall request the further comments of the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Section 800.6(b). Any Council comment provided in response to such a request will be taken into account by the Navy in accordance with 36 CFR Section 800.6(c)(2) with reference only to the subject of the dispute; the Navy's responsibility to carry out all actions under this Memorandum of Agreement that are not the subjects of the dispute will remain unchanged.

Execution of this Memorandum of Agreement by the Navy, the Port, and the California SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence that the Navy has afforded the Council an opportunity to comment on the lease of approximately 220 acres of FISC Oakland to the Port and its effects on historic properties, and that the Navy has taken into account the effects of the undertaking on historic properties.

MEMORANDUM OF AGREEMENT

Naval Supply Center Cakland Historic District

Navy Lease to Port of Oakland

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DEPARTMENT OF THE NAVY

By: Raciley Date: 8 Nov 94 J. R. Bailey, CAPT, SC, USN [Name and Title of Signer]
Commanding Officer, Fleet and Industrial Supply Center Oakland
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
By: Date: Date: December 5, 1994
[Name and Title of Signer]
Concur: APPROVED AS TO FORM AND LEGALITY THIS
PORT OF OAKLAND 22 Marcher 1994
By: Date: 11/15/94 Port Resolution No. 9433
Charles R. Roberts, Executive Director [Name and Title of Signer]
ACCEPTED for the Advisory Council on Historic Preservation
By: Note to Beach Date: 12/22/94
[Name and Title of Signer]

Exhibi 370EM CHANNEL DARLAND ES UALY 0 ž ġ ... d) INNER CITY OF OAKLAND 5



July 11, 1994 .

Mr. Les Hausrath, Chair and Board Members Oakland Landmarks Preservation Advisory Board City Hall One City Hall Plaza Oakland, CA 94612

RE: Proposed Redevelopment of Naval Supply Center Oakland

Dear Mr. Hausrath and Board Members:

The Port has reviewed the recommendations of the Landmarks Preservation Board outlined in the letter signed by you dated April 27, 1994. After consideration of the options available, and consultation with City staff, the Port agrees to the following program to mitigate impacts to the potential historic district at the Naval Supply Center. As a formality, the Port will require approval from the Board of Port Commissioners prior to its implementation.

- 1. Provide well publicized tours of the NSCO led by trained docents, in coordination with the Navy on various dates.
- 2. Phase demolition.
- 3. Make a vigorous effort to submit a grant application, and to secure funding in the amount of \$150,000 for a Legacy Grant under the Department of Defense. It is estimated that \$50 million is available for grants under this program. Applications are due by August 15, 1994.

The grant application would include:

- o Preparation of high caliber video for national viewing. PBS or documentary quality is desired. This effort would include a search for World War II footage of NSCO.
- Development of oral histories of NSCO.
- O Development of a monograph in consultation with the Oakland Heritage Alliance, for public dissemination and for use in video.
- Development of NSCO "exhibits" or story boards in consultation with the Oakland Museum, to be located at Berth 40 (Port View Park under development) and at the Oakland Airport in one of the terminal buildings. Intent is to place exhibit in a location with maximum public exposure. The intent would be to use artifacts from NSCO, if available, in the exhibit.
- The goal of the Landmarks Board is for video and exhibits, publications, etc. to capture the history of World War II and its tremendous impact on the social, cultural and industrial development of Oakland, and the role Oakland and its Naval facilities played in World War II events.
- o If the grant is not obtained the first year, the Port will resubmit the application the next year.

Mr. Les Hausrath and Board Members July 11, 1994 Page 2

- O If the Legacy Grant is secured, mitigation Item Number 7 below is dissolved.
- The Port will administer the Grant Application, and the Port will work to identify an appropriate grantee to administer the mitigation program, and include funds in the grant application for the costs of administration.
- 4. The Port, Navy and City, during the Section 106 process, will strive to develop this mitigation program for Historic Issues that will cover this lease action and future base closure actions that may lead to JIT and other berth development in NSCO location. This is due to the fact that there is not enough available information on the future uses of the base.
- Reconsider the preservation of the barracks building if the Navy and Port can, as an alternative, preserve in place one or more of the administrative buildings in the Northwest portion of Base, as part of the concept under Item Number 4. The Port will identify buildings in the northwest portion of the site that are suitable for preservation in lieu of the barracks. This area was nominated for preservation by West Oakland citizens that worked at the base during the War. They will be invited to participate in the identification of buildings for preservation. This concept will require Navy concurrence prior to final agreement.
- 6. Defer any Bay Trail or Public Access requirements or discussion until the base closure stage of the NSCO and initiation of the JIT project and environmental review. The Port will consult with Bay Trail advocates at this next juncture.
- 7. If Legacy funds are not granted within two years from the date of this letter, the Port will develop the video and exhibits listed under Item Number 3 above, but with more modest resources funded by Port. The amount of resources would be commensurate with lease and project development, and would not exceed \$55,000 in 1994 dollars, adjusted for inflation according to the Consumer Price Index, beginning one year, and no longer than two years from the date of this agreement.

The Port will determine the appropriate party to contract with a consultant to develop and administer the Mitigation Program. This may be a combination of the City, the Oakland Museum, the Port, and the Navy.

- 9. Record buildings to HABS standards prior to demolition.
 - o Include a description of the spatial and architectural relationships of the buildings that would be utilized in the formal video program discussed under Item Number 3 above.
 - o Select and preserve suitable artifacts for display.
- 10. This agreement is contingent upon the lease of the Naval Supply Center to the Port. If the lease is not consummated, the Port will not implement the above described mitigation program, since there will be no demolition of structures, and therefore no need for mitigation of impacts to the potential Historic District.
- 11. This represents the City's agreement for mitigation under the CEQA\NEPA review of the Naval Supply Center lease to the Port, as well as the NHPA Section 106 consultation.

Mr. Les Hausrath and Board Members July 11, 1994 Page 3

We look forward to working with the City to preserve this important part of Oakland's heritage. We believe that the creative use of resources will produce a product that will inform Oakland's citizens of the important role that the City played as part of the World War II effort.

Very truly yours,

Loretta Meyer,

Environmental Assessment Supervisor

cc: Helaine Kaplan-Prentice, Secretary



CITY HALL

ONE CITY HALL PLAZA . OAKLAND, CALIFORNIA 94

Landmarks Preservation Advisory Board

TTY 839-6

July 14, 1994

Loretta Meyer Environmental Assessment Supervisor Port of Oakland 530 Water Street Oakland, California 94604-2064

Dear Ms. Meyer:

At its July 11, 1994 meeting, the Landmark Preservation Advisory Board expressed its concurrence with the mitigation program for demolition at the Oakland Naval Supply Center as outlined in your letter of the same date. A copy of your letter is attached.

For purposes of clarification, under Item 11, the Landmarks Board represents the City only in so far as the Board is empowered to advise on matters related to historic preservation. Also, it is our understanding that under Item 9 a video record of the site of quality useable for the documentary will be made prior to demolition.

Thank you very much for your substantial effort on behalf of this important project, and for your cooperation in seeking an effective and comprehensive mitigation program. Please let us know if a letter of endorsement from the Board would help in support of the Legacy Grant application.

Sincerely,

Helanne Kaplan Thentie

Chairperson

Attachment F-M276 INSCOAK.HKP

FIRST AMENDED MEMORANDUM OF AGREEMENT AMONG

THE DEPARTMENT OF THE NAVY, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER, AND THE PORT OF OAKLAND, FOR THE LEASING AND DISPOSAL OF THE FLEET AND INDUSTRIAL SUPPLY CENTER, OAKLAND, CALIFORNIA

WHEREAS, the Department of the Navy (Navy) entered into a Memorandum of Agreement (MOA) for the lease of approximately 220 acres of the Fleet and Industrial Supply Center, Oakland (FISCO), California to the Port of Oakland (Port) with the California State Historic Preservation Officer (SHPO), concurred in by the Port and accepted by the Advisory Council on Historic Preservation (Council) on December 22, 1994 in accordance with the regulations for the Protection of Historic Properties (36 CFR Part 800), implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f), and

WHEREAS, in 1995 FISCO was included on the list of military bases to be closed pursuant to the Base Realignment and Closure Commission recommendations and is scheduled to cease operations in 1998, thereby precluding the Navy from carrying out Stipulation 2, the preparation of a Historic and Archeological Resources Protection Plan, in the aforesaid MOA, and

WHEREAS, pursuant to the special legislation (10 U.S.C. and the Defense Authorization Act of 1993) under which approximately 200 acres of FISCO have been leased to the Port the remaining acreage is to be leased to the Port, when no longer required by the Navy, and

WHEREAS, title to most of FISCO will revert to the Port, when the Navy has no further need for the property, and the remaining 136 acres is expected to be conveyed to the Port pursuant to special legislation as soon as the Installation Restoration Program is completed (scheduled for 2004), and

WHEREAS, this First Amended Memorandum of Agreement for the leasing and disposal of the FISCO fully supersedes the previous Memorandum of Agreement for the leasing of approximately 220 acres of FISCO to the Port, accepted by the Council on December 22, 1994, and

WHEREAS, the lease of the remaining acreage at FISCO and the future conveyance of FISCO property to the Port will have an effect on the Naval Supply Center Oakland Historic District, a property eligible for inclusion in the National Register of Historic Places, the Navy has consulted with the other parties to the aforesaid MOA pursuant to 36 CFR Section 800.5(e)5;

NOW, THEREFORE, the Navy and the California SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The Navy in cooperation with the Port of Oakland will ensure that the following measures are carried out:

- 1. The Navy has consulted the Pacific-Great Basin Systems Support Office, National Park Service, San Francisco, California to determine the level and kind of recordation required for the Naval Supply Center Oakland Historic District, the Port has completed this documentation and it has been accepted by the Historic American Buildings Survey.
- 2. The Navy, through the FISCO Public Affairs Officer and in coordination with the Port, will allow the continuation of guided tours of the Naval Supply Center Historic District for interested community groups upon request on such terms and conditions as the Commanding Officer of FISCO determines are compatible with the security and operation of the facility.
- 3. The Port will publicize tours of the Naval Supply Center Oakland Historic District and arrange for trained docents to lead the tours.
- 4. The Port will phase demolition of the historic buildings on the property it leases from the Navy at FISCO. Buildings will be demolished when an approved sublease for use of the land occupied by the building(s) requires its (their) removal.
- 5. The Navy provided the Pacific Locomotive Association, Inc., a non-profit corporation, railroad track for use on the Niles Canyon Railway, a historical railroad museum from the rail car marshaling yard of the Naval Supply Center Oakland Historic District.
- 6. The Port of Oakland agrees to carry out the obligations set forth in Resolution No. 96429, attached hereto as APPENDIX A, which expands the agreement set forth in the Port's letter of July 11, 1994 to the Oakland Landmarks Preservation Advisory Board and included as Exhibit 2 of the aforesaid 1994 MOA. The Navy assumes no obligation or responsibilities with respect to the provisions of APPENDIX A.
- 7. Should any party to this agreement object to any action carried out or proposed by the Navy with respect to the implementation of this agreement, the Navy shall consult with the objecting party to resolve the objection. If, after entering into such consultation, the Navy determines that the objection cannot be resolved through consultation directly with the objecting party, the Navy shall forward all relevant documentation to the Council, including the Navy's proposed response to the objection. The Council shall exercise one of the following options within 30 calendar days of receipt of all pertinent documentation:

- (a) advise the Navy in writing that the Council concurs with the Navy's proposed response and final decision, if so indicated, whereupon the Navy shall respond to the objecting party in writing; or
- (b) provide the Navy with written recommendations and/or comments, which the Navy shall take into account in reaching its final decision regarding its response to the objection in accordance with 36 CFR 800.6; or
- (c) notify the Navy in writing that the Council will provide written comments within a specified time frame pursuant to 36 CFR 800.6. The resulting comments shall be taken into account by the Navy in accordance with 36 CFR 800.6(c).

Should the Council fail to exercise one of the above options within 30 calendar days after receipt of all pertinent documentation, the Navy may assume the Council concurrence in the Navy's proposed response. In considering any party's comments, the Navy shall take into account any recommendation or comment with reference only to the subject of the objection. The Navy's responsibility to carry out all actions under this agreement that are not the subject of the objection shall remain unchanged and shall be executed accordingly.

Execution of this First Amended Memorandum of Agreement and implementation of its terms evidence that the Navy has afforded the Council an opportunity to comment on the leasing and disposal and their effects on historic properties, and that the Navy has taken into account the effects of the undertaking on historic properties.

DEPARTMENT OF THE NAVY

By: Date: 3/7/97
CONTANDING OFFICER, FISC OAKLAND

[Name and Title of Signer]

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By: Date: April 11, 1997

[Name and Title of Signer]

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Oly M. Sowle Date: 4/30/87

[Name and Title of Signer]

CONCUR:

PORT OF OAKLAND

Charles F. Poster, Executive Director

Approved as to legality and form:

David Alexander Port Attorney

Resolution No. 96429

P.A. #97-59

APPENDIX

APPENDIX A -- Resolution No. 96429 Board of Port Commissioners, City of Oakland approved at a regular meeting held December 17, 1996

BOARD OF PORT COMMISSIONERS CITY OF OAKLAND

RESOLUTION NO. 96429

RESOLUTION APPROVING AMENDMENT TO MEMORANDUM OF AGREEMENT TO MITIGATE IMPACTS TO HISTORIC DISTRICT AT FEDERAL INDUSTRIAL SUPPLY CENTER OAKLAND (NAVAL SUPPLY CENTER OAKLAND).

RESOLVED that the Board of Port Commissioners hereby approves an amendment to that certain Memorandum of Agreement among the United States Department of the Navy, the California State Historical Preservation Officer, the Port and the Advisory Council on Historic Preservation, signed on behalf of the Board on November 15, 1994, which amendment modifies and expands the program to mitigate impacts to the historic district at Federal Industrial Supply Center Oakland (Naval Supply Center, Oakland), us said modified and expanded program is described in Board Agenda Sheet Item No. 23 (December 17, 1926), and authorizes the Executive Director for and on behalf of the board to execute any necessary agreements to reflect said amendment; provided, however, that all such agreements shall be approved as to form and legality by the Port Actorney.

a regular . At

meeting held December 17, 1996

Passed by the following vote:

Commissioners Cole, Harris, Kramer, Lockhart, Loh,

Taylor and President Ortiz - 7

Noc: None

Ayes:

Absent: None

Board of Port Commissioners - PORT OF OAKLAND

Agenda Sheet

•					
SUBJECT:	Amendment	of	Memo	rai	ıď
30500.					73

ium of Agreement to Mitigate Impacts to Potential Historic . District at FISCO Due to Development of Vision 2000 Program

Date: December 17, 1996
Item No.
PROGRAM AREA
Airport Operations
Commercial Real Estate
X Maritime Operations ADD

Overzii Operations

Leo R. Brien SUBMITTED BY:

EXECUTIVE OFFICE RECOMMENDATION:

FACTUAL BACKGROUND:

٠,

On August 9, 1994, the Board of Port Commissioners passed Port Resolution 94314 which approved a Memorandum of Agreement (MOA) between the Port and the City of Oakland Landmarks Preservation Advisory Board to create a program to mitigate the unavoidable, adverte effects to the Naval Supply Center (now referred to as FISCO, which has been identified as an historic district eligible for inclusion on the National register of Historic Place. This MOA was adopted by the U.S. Navy, the Port of Oakland, the California State Historic Preservation Officer, and the rational Advisors Coursell of Figure 10. Advisory Council on Histori: Preservation as mitigation for the Port lease of 220 acres of FISCO and the demolition of structures on the FISCO property and fulfilled the review required by Section 106 of the National Historic Preservation Act (NHPA) .

Pursuant to the Defense Base Closure and Realignment Act of 1995, FISCO is now scheduled for closure in September, 1998. In order for the Navy to dispose of and convey the FISCO property to the Port, there must be another NHPA, Section 106 review. Therefore the Port and the Navy wish to amend the existing MOA to recognize the disposal and conveyance of the entire FISCO property to the Port and to mitigate the unavoidable, adverse effects of the Port's redevelopment will have on the FISCO historic district.

Port staff and the staff of the City of Oakland Landmarks Preservation Advisory Board (LPAB), which acts as the advisor to the City of Oakland on matters of historic preservation and is the designated agency which acts as the local consultant for purposes of compliance with the NHPA, and in consultation with the Oakland Heritage Alliance, have negotiated and agreed upon the following amendments to the MOA. These amendments have been accepted by the LPAB at their meeting on December 9, 1996.

Port will agree to the following mitigation measures:

- To continue providing public tours of FISCO as long as practicable and safe;
- To continue to phase demolition of structures at FISCO;
- To develop, produce and disseminate a documentary video to preserve the history and significance of FISCO, to be funded by the Port in an amount not to exceed \$200,000. The Port will provide an additional amount, not to exceed \$25,000, to

	will include the	e distribution and outreach prograduction packaging and distribution assional, good faith effort to restrict distribution of the videout of the videout control	pursue
IOARD ACTION R	EQUIRED:		
MOTION		BOARD ACTION TAKEN	DATE
X RESOLUTIO	N		
ORDINANCE	Ē		
INFORMATI	ON ONLY	SECRETARY OF THE BOARD	
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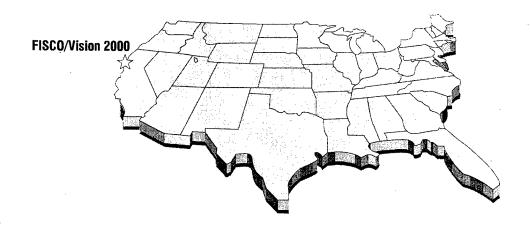
*Amendment of Memorandum of Agreement - Vision 2000 Program Page Two. of Board Letter December 17, 1996

- To provide funding, not to exceed \$55,000, for the preparation of a movable exhibit commemorating FISCO and its place in Oakland history and to provide exhibition space at the Oakland Airport as part of a program in collaboration with the Oakland Museum;
- To include in the design and development of public access areas at the FISCO, a structure, land form or landscaping feature which captures the true scale of the facilities and activities required for the FISCO historic function,
- To prepare and submit an application to the State Historic Resources Commission to designate the FISCO site as a State Historical Point of Interest;
- To make the three officer quarters buildings available for relocation off-site and reuse by non-profit or other community hased organizations at no charge for a period not to exceed three months prior to the demolition of the buildings. The Port will provide funding to assist with the relocation up to the amount of the Port Engineer's cost estimate to demolish the buildings. The offer will be widely advertised and made in accordance with conditions, indemnifications, releases and liability insurance to be provided in advance to the Port.
 The organizations receiving the building(s) are solely responsible, at no cost to the Port, to satisfy all requirements necessary to remove, transport and resite the buildings. If no viable offers that meet the Port's requirements are received within the three months, the Port may demolish the houses.

The LPAB has agreed that the preservation of a building in place at FISCO is not feasible because of critical land use and engineering restrictions. LPAB has further agreed that this mitigation program constitutes the complete and final mitigation for the unavoidable, adverse effects on the historic district through the development of the Vision 2000 Program or other redevelopment by the Port.

RECOMMENDATION:

It is recommended that the Board authorize the Executive Director to execute the above amendments to the Memorandum Of Agreement and enter into any other necessary agreements with the City of Oakland and the U.S. Navy or other parties to adopt and implement the Landmarks Preservation Advisory Board plan for a program to mitigate impacts to the potential historic district at FLSCO as a recent of Board reduction. result of Port redevelopment.



APPENDIX H BIOLOGICAL RESOURCES

SPECIES STATUS NEAR THE PROJECT SITE LETTERS AND REPLIES CONCERNING BIOLOGICAL RESOURCES

H-1

- 1. LETTER DATED 2/7/94 FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY comment on NOP of 1994 FISCO Leasing EIR/EIS
- 2. LETTER DATED 5/10/96 FROM US NAVY TO NATIONAL MARINE FISHERIES SERVICE request for endangered species list
- 3. LETTER DATED 6/6/96 FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY response to request for endangered species list
- 4. LETTER DATED 5/10/96 FROM US NAVY TO US FISH AND WILDLIFE SERVICE request for endangered species list
- 5. LETTER DATED 6/27/96 FROM US FISH AND WILDLIFE SERVICE TO US NAVY response to request for endangered species list
- 6. LETTER DATED 3/6/97 FROM US NAVY TO NATIONAL MARINE FISHERIES SERVICE request for concurrence of no adverse effect
- 7. LETTER DATED 4/23/97 FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY response to request for concurrence
- 8. LETTER DATED 3/6/97 FROM US NAVY TO US FISH AND WILDLIFE SERVICE request for concurrence of no adverse effect
- 9. LETTER DATED 4/24/97 FROM US FISH AND WILDLIFE SERVICE TO US NAVY response to request for concurrence
- 10. LETTER DATED 4/28/97 FROM US NAVY TO US FISH AND WILDLIFE SERVICE request for initiation of Endangered Species Act Section 7 consultation
- 11. LETTER DATED 6/26/97 FROM US FISH AND WILDLIFE SERVICE TO US NAVY response to request for initiation of Endangered Species Act Section 7 consultation
- 12. LETTER DATED 5/5/97 FROM LEORA FEENEY TO PORT OF OAKLAND status of burrowing owl habitat at Middle Harbor Park
- 13. LETTER DATED 5/12/97 FROM ENTRIX TO PORT OF OAKLAND status of eelgrass in Oakland Inner and Middle Harbors

Appendix H Biological Resources

The table below shows federal and state species of concern observed in the general area of the FISCO/Vision 2000 project site. The table also lists threatened and endangered species and those species proposed for listing as threatened or endangered. However, it is unlikely that any threatened and endangered species are present at the project site.

Table H-1 Species Status Near the Project Site

Common Name	Federal	State	CNPS
Scientific Name	Status	Status	Status
ni .			
<u>Plants</u> Alkali milk-vetch			
		SCSC	1B
Astragalus tener var. tener		•	
Kellogg's wedge-leaved horkelia	FSC	-	1B
Horkelia cuneata ssp. sericea			
Point Reyes (Northcoast) birds beak	FSC	_	1B
Cordylanthus maritimus ssp.			
palustris			
Adobe sanicle	FSC	SR	1B
Sanicula maritima			
San Francisco Bay spineflower	FC	-	1B
Chorizanthe cuspidata var.			
cuspidata			•
Santa Cruz tarplant	FC	SE	1B
Holocarpha macradenia			
Invertebrates			
San Francisco lacewing	FSC	_	
Nothochrysa californica	100		-
Bridges' coast range shoulderband snail	FSC		
Helminthoglypta nickliniana	150		-
Ricksecker's water scavenger beetle	FSC		
Hydrochara rickseckeri	100	_	
•			
<u>Fish</u>			
Green sturgeon	FSC	-	_
Acipenser medirostris			
Longfin smelt	FSC	SCSC	_
Spirinchus thaleichthys			
Coho salmon	FPT	SSCT	
Oncorhynchus kisutch			
Delta smelt	FT	ST	
Hypomesus transpacificus		_	

Common Name	Federal	State	CNPS
Scientific Name	Status	Status	Status
Sacramento splittail	FPT	-	
Pogonichthys macrolepidotus			
Tidewater goby	FE	SCSC	
Eucyclogobius newberryi			
<u>Amphibians</u>			
Foothill yellow-legged frog	FSC	SCSC	
Rana boylii			
California red-legged frog	FT	SCSC	
Rana aurora draytonii			*
California tiger salamander	· FC	SCSC	
Ambystoma californiense			
,			,
Reptiles			
Alameda whipsnake	FPE	ST	_
Masticophis lateralis euryxanthus		01	
California horned lizard	FSC	SCSC	_
Phrynosoma coronatum frontale	100	5050	. –
Northwestern pond turtle	FSC	SCSC	
Clemmys marmorata m.	100	3636	-
Southwestern pond turtle	FSC	SCSC	
Clemmys marmorata p.	100	,	_
Ciominy o marmorada p.			
Birds	•	•	
Double crested cormorant	·	SCSC	
Phalacrocorax auritus		5 55 5	
California clapper rail	FE	SE	·
Rallus longirostris obsoletus			
Western snowy plover	FT	SE	
Charadrius alexandrinus nivosus		V 2	
California black rail	FSC	ST	
Laterallus jamaicensis coturniculus			
Alameda song sparrow	FSC	SCSC	
Melospiza melodia maxillaris			
Bell's sage sparrow	FSC	SCSC	
Amphispiza belli b.			
Bald eagle	FT	SE	•••
Haliaeetus leucocephalus			
Ferruginous hawk	FSC		
Buteo regalis			
Burrowing owl	***	SCSC	
Speotytoaunicularia			
Little willow flycatcher	FSC		
Empidonax taillii brewsteri			
Saltmarsh common yellowthroat	FSC	SCSC	
Geothlypis trichas sinuosa	200	0000	
Tricolored blackbird	FSC	SCSC	**
Agelaius tricolor			

Common Name	Federal	State	CNPS
Scientific Name	Status	Status	Status
<u>Mammals</u>			
Salt marsh harvest mouse	FE	SE	
Reithrodontomys raviventris	111	315	
Salt marsh wandering shrew	FC	SCSC	
Sorex vagrans halicoetes	10	3030	
Alameda Island mole	FSC	SCSC	
Scapanus latimanus parvus	100	5050	
Berkeley kangaroo rat	FSC		_
Diptodomys heermanni		•	
berkleyensis			•
Fringed myotis bat	FSC		
Myotis thysanodes			
Greater western mastiff bat	FSC	SCSC	
Eumops perotis californicus			
Long-eared myotis bat	FSC		
Myotis evotis			
Long-legged myotis bat	FSC		-
Myotis volans			
Pacific western big-eared bat	FSC	••	
Plecotus townsendii townsendii			
San Francisco dusky-footed woodrat	FSC	SCSC	
Neotoma fuscipes annectens			
Yuma myotis bat	FSC	-	·
Myotis yumanensis			

Source: California Department of Fish and Game 1995; Skinner and Pavlik 1994; US Fish and Wildlife Service 1996

	Federal Status		State Status	Californ	nia Native Plant Society (CNPS) Status
FE FT FC	EndangeredThreatenedCandidate (formerly	SE ST SR	EndangeredThreatenedRare	List 1A	= Presumed extinct in California
FPE	C1) = Proposed endangered	SCSC CEOA	 California species of special concern 	List 1B	 Rare and endangered in California and
FPT FSC	 Proposed threatened Species of concern (formerly C2) 	SSCT	Protected underCEQACandidate for listingas threatened	List 3	elsewhere Need more information - a
FSCR	- Species of concern recommended listing		as tineatened	List 4	review list = Limited distribution - a watch list

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ITED STATES DEPARTMENT O: MMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE

Southwest Region Habitat Conservation Division 777 Sonoma Avenue, Room 325 Santa Rosa, California 95404

February 7, 1994

F/SW022:DBM

Mr. Raymond Chiang
Environmental Engineer
Environmental Planning Branch
Western Division Naval Facilities Engineering Command
P.O. Box 727
San Bruno, California 94066

Dear Mr. Chiang:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Commercial Uses of a Portion of Naval Supply Center Oakland. The following comments are meant to assist you in the completion of the EIR/EIS.

The National Marine Fisheries Service is responsible for preserving and enhancing marine, estuarine, and anadromous fish resources and the habitats that support these resources. The EIR/EIS should fully address any impacts associated with these resources.

We recommend that the EIR/EIS fully describe all dredge and fill activities, documenting the volumes of material and the size of paticular areas to be modified or impacted. The requirements of a long-term future maintenance dredging and disposal plan must be addressed in addition to new dredging proposed for the redevelopment project. Upland disposal of dredged material is

Upland activities planned for redeveloping the port facilities should be described, especially those that contribute to water quality problems of the bay. For example, a stormwater management plan should be described indicating runoff management with oil and grease traps before entry into the bay, or to a sewer system if appropriate.

If any redevelopment activities require fill in water areas or requires shore realignments, rip-rap, or bulkheads, these items will also need justification and an alternatives analysis.

If you have questions concerning these comments or wish to discuss the project further, please contact Mr. Dante Maragni of my staff at: National Marine Fisheries Service, Southwest Region, Habitat Conservation Division, 777 Sonoma Avenue, Room 325, Santa Rosa, California 95404; telephone 707-578-7513.

Sincerely,

James R. Bybee

Environmental Coordinator Northern Area

cc: Port of Oakland, C. Schwarz



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94086-5006

IN REPLY REFER TO:

5090.1B 185NR/EP-970 10 May 1996

Mr. James Bybee National Marine Fisheries Service 777 Sonoma Ave. Rm 325 Santa Rosa, CA 95404

Dear Mr. Bybee:

We request a list of federally listed threatened and endangered species potentially occurring at the Naval and Fleet Industrial Supply Center, Oakland (FISCO), California. FISCO has been identified for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510).

Current schedule for operational closure in September 1998. The Port of Oakland will generate a reuse plan identifying the future land use of the facility. Reuse is expected to focus on the development of a joint intermodal terminal, expansion of marine freight handling terminals, development of a public access, and habitat mitigation areas. The anticipated issues of concern regarding the reuse by the Port of Oakland include: transportation, circulation, and traffic impacts including railroad, truck and automobile; geologic and hydrologic conditions affecting reuse; cultural resources; air quality; hazardous materials and hazardous waste; and cumulative effects of waterfront activities.

FISCO is located on approximately 541 acres on the eastern side of San Francisco Bay, south of the San Francisco-Oakland Bay Bridge, within the City of Oakland. The facility consist of four types of operations: general supply operations, waterfront operations, administration, and miscellaneous tenant operations. In 1995, the Port of Oakland began a 50 year lease of 220 acres of FISCO to support their intermodal rail facilities and maritime-cargo related uses.

please provide the species list within 30 days of receipt of this letter. If you have other environmental concerns which may affect the closure or reuse of the facility, we would appreciate receiving those concerns at this time.

For additional information our point-of-contact is Mr. Gary Munekawa, Attention: Code 185GM (telephone 415-244-3022), at the letterhead address.

Sincerely,

Douglas R. Pomeroy

Biology/Base Closure Section

Encls.

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UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE

'Southwest Region 777 Sonoma Ave. Rm 325 Santa Rosa, CA 95404

June 6, 1996 F/SW031:PR

Mr. Douglas R. Pomeroy Biology/Base Closure Section Department of the Navy Engineering Field Activity, West Naval Facilities Engineering Command 900 Commodore Drive San Bruno, California 94066-5006

Dear Mr. Pomeroy:

This letter is in response to your request of May 10, 1996 regarding the presence of Federally listed threatened or endangered species or critical habitat that may be affected by the proposed closure and reuse of the Naval and Fleet Industrial Supply Center (FISCO) in Oakland, California.

Available information indicates that the Federally listed endangered Sacramento River winter-run chinook salmon may occur at the project site. No critical habitat occurs at the proposed project site. No other listed species under the jursidiction of the National Marine Fisheries Service occur in the project area. Your letter also requested identification of other environmental concerns which may affect the closure or reuse of the base facility. My letter of February 7, 1994 to Mr. Raymond Chiang regarding the Notice of Preparation identified environmental concerns with maintenance dredging and disposal, in-water fill or rip-rap placement, and water quality impacts from stormwater runoff. I have attached a copy of this letter for your reference.

The U.S. Fish and Wildlife Service (USFWS) may have listed species or critical habitat under its jurisdiction in the project area. Please contact Mr. Joel Medlin, Field Supervisor, USFWS, at 2800 Cottage Way, Room E-1803, Sacramento, California 95925, or (916) 979-2710, regarding the presence of listed species or critical habitat under USFWS jurisdiction that may be affected by your project.

My staff is available to review the EIR/EIS when it becomes available. If you have questions concerning these comments, please contact Ms. Penny Ruvelas of my staff at (707) 575-6062.



Sincerely,

James R. Bybee

Environmental Coordinator

Northern Area

cc: Craig Wingert, NMFS Deborah McKee, DFG



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST NAVAL FACILITIES ENGINEERING COMMAND 900 COMMODORE DRIVE SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B 185NR/EP-969 10 May 1996

Mr. Joel Medlin U.S. Fish and Wildlife Service Sacramento Field Office 2800 Cottage Way, Room E-1803 Sacramento, CA 95825-1846

Dear Mr. Medlin:

We request a list of federally listed threatened and endangered species potentially occurring at Fleet and Industrial Supply Center Oakland, (FISCO) California. FISCO has been identified for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510).

Current schedule for operational closure is September 1998. The Port of Oakland will generate a reuse plan identifying the future land use of the facility. Reuse is expected to focus on the development of a joint intermodal terminal, expansion of marine freight handling terminals, development of a public access, and habitat mitigation areas.

The facility is located on the eastern shore of San Francisco Bay, just south of the San Francisco-Oakland Bay Bridge and adjacent to the Port of Oakland. The facility is intensely developed and was constructed in 1940 on 541 acres of former marsh and submerged tideland. The facility is divided into six land use areas: administration/personnel support area, central supply area, waterfront area, residential area, tenant area, and Port of Oakland leased area (a map of the facility is enclosed).

Please provide this list within 30 days of receipt of this letter. If you have other concerns which may affect the closure or reuse of this facility pursuant to the Base Realignment and Closure process, we would appreciate receiving those concerns at this time.

For additional information our point-of-contact is Mr. Gary Munekawa, Attention: Code 185GM (telephone 415-244-3022), at the letterhead address.

Sincerely,

Douglas R. Pomeroy

Biology/Base Closure Section

Encls.

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IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825

1-1-96-SP-986

June 27, 1996

Mr. Douglas R. Pomeroy, Biology/Base Closure Section Attn: Mr. Gary Munekawa, Code 185GM Department of the Navy, Engineering Field Activity, West Naval Facilities Engineering Command 900 Commodore Drive San Brune, California 94966-5006

Subject:

Species Lists for the Fleet and Industrial Supply Center

Oakland, Alameda County, California

Dear Mr. Pomeroy:

As requested by letter from your agency dated May 10, 1996, you will find enclosed lists of sensitive species that may be present in or may be affected by projects in the subject project area (see Enclosures A and B). These lists fulfill the requirement of the Fish and Wildlife Service (Service) to provide species lists pursuant to section 7(c) of the Endangered Species Act of 1973, as amended (Act).

The Service used your map(s) and/or other information to locate the proposed project on an U.S. Geological Survey (USGS) 7.5 minute quadrangle map(s)(Quads). The animal species listed in Enclosure A are those species we believe may occur within, or be affected by projects within, the USGS Quad 466D, where your project is planned.

The plants listed in Enclosure A are those that have actually been observed in the project Quad(s). Enclosure B is a list of sensitive plants that have been observed in surrounding Quads. These plants may also occur in the Quad(s) where your project is planned.

Some of the species listed in Enclosures A and B may not be affected by the proposed action. A trained biologist or botanist, familiar with the habitat requirements of the listed species, should determine whether these species or habitats suitable for these species may be affected by the proposed action.

Some pertinent information concerning the distribution, life history, habitat requirements, and published references for the listed species is available upon request. This information may be helpful in preparing the biological assessment for this project, if one is required. Please see Enclosure C for a discussion of the responsibilities Federal agencies have under section 7(c) of the Act and the conditions under which a biological assessment must be prepared by the lead Federal agency or its designated non-Federal representative.

Formal consultation, pursuant to 50 CFR § 402.14, should be initiated if you determine that a listed species may be affected by the proposed project. If you determine that a proposed species may be adversely affected, you should consider requesting a conference with our office pursuant to 50 CFR § 402.10. Informal consultation may be utilized prior to a written request for formal

consultation to exchange information and resolve conflicts with respect to a listed species. If a biological assessment is required, and it is not initiated within 90 days of your receipt of this letter, you should informally verify the accuracy of this list with our office.

Candidate species are currently being reviewed by the Service and are under consideration for possible listing as endangered or threatened. Candidate species have no protection under the Endangered Species Act, but are included for your consideration as it is possible that one or more of these candidates could be proposed and listed before the subject project is completed. Should the biological assessment reveal that candidate species may be adversely affected, you may wish to contact our office for technical assistance. One of the potential benefits from such technical assistance is that by exploring alternatives early in the planning process, it may be possible to avoid conflicts that could otherwise develop, should a candidate species become listed before the project is completed.

The Service recently changed its policy on candidate species. The term candidate now strictly refers to species for which the Service has on file enough information to propose listing as endangered or threatened. Former candidate category 2 species - species for which listing is possibly appropriate but for which the Service lacks sufficient information to support a listing proposal - are now called species of concern. They are no longer monitored by the Service. However we have retained them on the enclosed list for general information. We encourage consideration of them in project planning, as they may become candidate species in the future.

If the proposed project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by the U.S. Army Corps of Engineers (Corps), a Corps permit shall be required, pursuant to section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act. Impacts to wetland habitats require site specific mitigation and monitoring. You may request a copy of the Service's General Mitigation and Monitoring Guidelines or submit a detailed description of the proposed impacts for specific comments and recommendations.

Please contact Mr. Michael Thabault at (916) 979-2725 if you have any questions regarding the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of the section 7 office assistant at this address. If you have any questions regarding wetlands, contact Mr. Mark Littlefield at (916) 979-2113.

Sincerely,

Joel A. Medlin Field Supervisor

Enclosures

Enclosure A 1

Federally Listed and Other Sensitive Species that May Occur in or be Affected by Projects in the Area of the Following Selected Quads

File Reference 1-1-96-SP-986 June 12, 1996

466D OAKLAND WEST

LISTED SPECIES

Mammals.

salt marsh harvest mouse, Reithrodontomys raviventris(E)

Birds

American peregrine falcon, Falco peregrinus anatum(E)
California brown pelican, Pelecanus occidentalis californicus(E)
California clapper rail, Rallus longirostris obsoletus(E)
California least tern, Sterna antillarum (-albifrons) browni(E)
bald eagle, Haliaeetus leucocephalus(T)
western snowy plover, Charadrius alexandrinus nivosus(T)

Amphibians

California red-legged frog, Rana aurora draytonii(T)

Fish

delta smelt, Hypomesus transpacificus(T) tidewater goby, Eucyclogobius newberryi(E) winter-run chinook salmon, Oncorhynchus tshawytscha(E) winter-run chinook salmon crit. habitat, Oncorhynchus tshawytscha(E)

PROPOSED SPECIES

Reptiles

Alameda whipsnake, Masticophis lateralis euryxanthus(PE)

Fish

Coho salmon, Oncorhynchus kisutch(PT)
Sacramento splittail, Pogonichthys macrolepidotus(PT)

CANDIDATE SPECIES

Amphibians

California tiger salamander, Ambystoma californiense(C)

Plants

Santa Cruz tarweed, Holocarpha macradenia(C)

SPECIES OF CONCERN

Mammals

Alameda Island mole, Scapanus latimanus parvus(SC)
Berkeley kangaroo rat, Dipodomys heermanni berkleyensis(SC)
Pacific western big-eared bat, Plecotus townsendii townsendii(SC)
San Francisco dusky-footed woodrat, Neotoma fuscipes annectens(SC)
Yuma myotis bat, Myotis yumanensis(SC)
fringed myotis bat, Myotis thysanodes(SC)

Federally Listed and Other Sensitive Species that May Occur in or be Affected by Projects in the Area of the Following Selected Quads

File Reference 1-1-96-SP-986 June 12, 1996

Mammals, continued

greater western mastiff-bat, Eumops perotis californicus(SC) long-eared myotis bat, Myotis evotis(SC) long-legged myotis bat, Myotis volans(SC) salt marsh vagrant shrew, Sorex vagrans halicoetes(SC)

Birds

Alameda (South Bay) song sparrow, Melospiza melodia maxillaris(SC) Bell's sage sparrow, Amphispiza belli belli(SC) black rail, Laterallus jamaicensis(SC) ferruginous hawk, Buteo regalis(SC) little willow flycatcher, Empidonax traillii brewsteri(SC) saltmarsh common yellowthroat, Geothlypis trichas sinuosa(SC) tricolored blackbird, Agelaius tricolor(SC)

Reptiles

California horned lizard, Phrynosoma coronatum frontale(SC) northwestern pond turtle, Clemmys marmorata marmorata(SC) southwestern pond turtle, Clemmys marmorata pallida(SC)

Amphibians

foothill yellow-legged frog, Rana boylii(SC)

Invertebrates

Bridges' Coast Range shoulderband snail, Helminthoglypta nickliniana bridgesi(SC)
Ricksecker's water scavenger beetle, Hydrochara rickseckeri(SC)
San Francisco lacewing, Nothochrysa californica(SC)

Plants

Kellogg's (wedge-leaved) horkelia, Horkelia cuneata ssp. sericea(SC)
San Francisco Bay spineflower, Chorizanthe cuspidata var. cuspidata(SC)
adobe sanicle, Sanicula maritima(SC)
alkali milk-vetch, Astragalus tener var. tener(SC)
northcoast bird's-beak, Cordylanthus maritimus ssp. palustris(SC)

(E)--Endangered

Species that is in danger of extinction throughout all or a significant portion of its range

(T)--Threatened

Species that is likely to become endangered within the foreseeable future

(P)--Proposed

Species that he been proposed in the Federal Register to be listed as endangered or threatened

(CH)--Critical Habitat

Area essential to the conservation of a species

(C)-Candidate:

Species for which the Fish and Wildlife Service has sufficient biological information to support a

proposal to list as endangered or threatened

(SC)--Species of Concern:

Species for which existing information indicated may warrant listing, but for which substantial biological information to support a proposed rule is lacking.

(CR)--Recommended for Candidate Status

()-Listing petitioned.

Sensitive Plant Species That May Occur in the Quads Surrounding Quad 466D, California

File Reference 1-1-96-SP-986 June 12, 1996

LISTED SPECIES

California sea blite, Suaeda californica(E)
Marin dwarf-flax, Hesperolinon congestum(T)
Presidio clarkia, Clarkia franciscana(E)
Presidio manzanita, Arctostaphylos hookeri ssp. ravenii(E)
Presidio manzanita, Arctostaphylos hookeri ssp. ravenii(E)
Tiburon jewelflower, Streptanthus niger(E)
Tiburon mariposa lily, Calochortus tiburonensis(T)
Tiburon paintbrush, Castilleja affinis ssp. neglecta(E)
beach layia, Layia carnosa(E)
marsh sandwort, Arenaria paludicola(E)
robust spineflower, Chorizanthe robusta(E)
white-rayed pentachaeta, Pentachaeta bellidiflora(E)

PROPOSED SPECIES

San Bruno Mountain manzanita, Arctostaphylos imbricata(PT)
San Francisco lessingia, Lessingia germanorum(PE)
pallid manzanita (Alameda manzanita), Arctostaphylos pallida(PT)
showy Indian clover, Trifolium amoenum(PE)

CANDIDATE SPECIES

Santa Cruz tarweed, Holocarpha macradenia(C)

SPECIES OF CONCERN

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Diablo rock-rose, Helianthella castanea(SC)
   Kellogg's (wedge-leaved) horkelia, Horkelia cuneata ssp. sericea(SC)
   Marin checkermallow, Sidalcea hickmanii ssp. viridis(SC)
   Mission Delores campion, Silene verecunda ssp. verecunda(SC)
   Montara manzanita, Arctostaphylos montaraensis(SC)
   San Francisco Bay spineflower, Chorizanthe cuspidata var. cuspidata(SC)
   San Francisco gumplant, Grindelia hirsutula var. maritima(SC)
   San Francisco manzanita, Arctostaphylos hookeri ssp. franciscana(SC)
   San Francisco owl's-clover, Triphysaria floribunda(SC)
San Francisco popcornflower, Plagiobothrys diffusus(SC)
   Tiburon tarweed, Hemizonia multicaulis ssp. vernalis(SC)
   adobe sanicle, Sanicula maritima(SC)
   alkali milk-vetch, Astragalus tener var. tener(SC)
   compact cobweb thistle, Cirsium occidentale var. compactum(SC)
   delta tule-pea, Lathyrus jepsonii var. jepsonii(SC)
   fragrant fritillary, Fritillaria liliacea(SC)
   most beautiful (uncommon) jewelflower, Streptanthus albidus ssp.
peramoenus(SC)
   northcoast bird's-beak, Cordylanthus maritimus ssp. palustris(SC)
   pappose spikeweed, Hemizonia parryi ssp. congdonii(SC)
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Enclosure B

Sensitive Plant Species That May Occur in the Quads Surrounding Quad 466D, California

File Reference 1-1-96-SP-986 June 12, 1996

(E)--Endangered

Species that is in danger of extinction throughout all or a significant portion of its range

(T)-Threatened

Species that is likely to become endangered within the foreseeable future

(P)--Proposed

Species that he been proposed in the Federal Register to be listed as endangered or threatened

(CH)--Critical Habitat

Area essential to the conservation of a species

(C)-Candidate:

Species for which the Fish and Wildlife Service has sufficient biological information to support a

proposal to list as endangered or threatened

(SC)-Species of Concern:

Species for which existing information indicated may warrant listing, but for which substantial

biological information to support a proposed rule is lacking.

(CR)--Recommended for Candidate Status

()-Listing petitioned.

Enclosure C

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) and (c) OF THE ENDANGERED SPECIES ACT

SECTION 7(a) Consultation/Conference

Requires: (1) federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species; (2) Consultation with FWS when a federal action may affect a listed endangered or threatened species to insure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after determining the action may affect a listed species; and (3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat.

SECTION 7(c) Biological Assessment-Major Construction Activity¹

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action on listed and proposed species. The process begins with a Federal agency requesting from FWS a list of proposed and listed threatened and endangered species. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the list, the accuracy of the species list should be informally verified with our Service. No irreversible commitments of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may proceed; however, no construction may begin.

We recommend the following for inclusion in the BA: an on-site inspection of the area affected by the proposal which may include a detailed survey of the area to determine if the species or suitable habitat are present; a review of literature and scientific date to determine species' distribution, habitat needs, and other biological requirement; interviews with experts, including those within FWS, State conservation departments, universities and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of indirect effects of the proposal on the species and its habitat; an analysis of alternative actions considered. The BA should document the results, including a discussion of study methods used, and problems encountered, and other relevant information. The BA should conclude whether or not a listed or proposed species will be affected. Upon completion, the BA should be forwarded to our office.

^{&#}x27;A construction project (or other undertaking having similar physical impacts) which is a major federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332(2)C).

^{2&#}x27;Effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action.

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5090.1B 1852/EP7-1234 6 March 1997

Mr. James Bybee National Marine Fisheries Service 777 Sonoma Ave, Room 325 Santa Rosa, CA 95404

Dear Mr. Bybee:

We are currently distributing the joint Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the Disposal and Reuse of the Navy Fleet and Industrial Supply Center, Oakland (FISCO), California for your review and comment. We have enclosed an additional copy of the EIS document for your review to meet the interagency consultation requirements of the Endangered Species Act, Section 7. This is a joint EIS/EIR document supporting the Navy property disposal and subsequent Port of Oakland reuse of FISCO. Pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510 Title XXIX, and the specific base closure decisions approved by Congress in September 1995, the Navy Fleet and Industrial Supply Center is scheduled for closure in September 1998.

FISCO is a heavily urbanized industrial port area. The presence and status of endangered and threatened species on and adjacent to FISCO is described in Chapter 3 of the EIS/EIR, the Environmental Consequences of the Navy action of the FISCO property disposal is described in Chapter 4, and the Environmental Consequences of Port of Oakland reuse are described in Chapter 5. To expedite this consultation, we request consultation only on the Navy Disposal alternative, and the Port of Oakland Reduced Harbor Fill reuse alternative at this time.

We request your written concurrence with our determination provided the mitigation measures as identified in the draft EIS/EIR are implemented as described that the Navy property disposal and subsequent community reuse of FISCO will have no adverse affect on any federally threatened or endangered species under your cognizance. As noted in the draft EIS/EIR, site specific Port dredging and in-water construction activities may require further coordination with your office and the Army Corps of Engineers.

We request you respond by April 22, 1997, so that your concurrence is received by the end of the draft EIS/EIR comment period. Thank you for your assistance on this Navy project. For additional information on the Draft EIS/EIR our point of contact is: Mr. Gary Munekawa at the address shown above, telephone 415-244-3022. I may be reached at 415-244-3008 regarding the Endangered Species Act, Section 7, consultation.

Sincerely,

Douglas R. Pomeroy Group Leader, Base Conversion/Biology Section Environmental Planning Branch

copy to: Port of Oakland (Loretta Meyer)

Enclosure



UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southwest Region 501 West Ocean Boulevard, Suite 4200 Long Beach, California 90802-4213 TEL (310) 980-4000; FAX (310) 980-4018

APR 23 1997

Mr. Douglas R. Pomeroy Group Leader, Base Conversion/Biology Section Environmental Planning Branch Department of the Navy Engineering Field Activity, West Naval Facilities Engineering Command 900 Commodore Drive San Bruno, California 94066-2402

Dear Mr. Pomeroy:

Thank you for your March 6, 1997, letter requesting concurrence with your determination that Navy disposal and subsequent Port of Oakland reuse of the Navy Fleet and Industrial Supply Center, Oakland will have no adverse effect on any federally threatened or endangered species under National Marine Fisheries Service jurisdiction. At this time, your letter only requests consultation on two alternatives described in the current Draft Environmental Impact Statement for the project: The Navy Disposal Alternative, and the Port of Oakland Reduced Harbor Fill Alternative.

Based on the project description and measures which have been incorporated to protect aquatic resources, I concur with your determination that the winter-run chinook salmon, the proposed-endangered Central Valley steelhead, and the proposed-endangered Central Coast steelhead are not likely to be adversely affected by either the Navy Disposal or Reduced Harbor Fill alternatives.

This concludes section 7 consultation for the endangered winterrun chinook salmon, and conferencing for the proposed-endangered Central Valley and Central Coast steelhead evolutionarily significant units. Although conferencing for steelhead does not take the place of a section 7 consultation, no further consultation should be necessary in the event of a steelhead listing, provided that the project is implemented as described in the March 1997 Draft Environmental Impact Statement. Should project plans change, or if additional information on the proposed species becomes available, this determination may be reconsidered.



If you have any questions please contact Mr. Chris Mobley of my staff at (707) 575-6056; e-mail Chris.Mobley@noaa.gov.

Sincerely,

woodogasth

William T. Hogarth, Ph.D. Acting Regional Administrator

cc: J. Medlin, FWS J. Turner, DFG

C. Morris, EPA

5090.1B 1852/EP7-1235 6 March 1997

Mr. Joel Medlin
U.S. Fish and Wildlife Service - Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, CA 95825

Dear Mr. Medlin:

We are currently distributing the joint Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the Disposal and Reuse of the Navy Fleet and Industrial Supply Center, Oakland (FISCO), California for your review and comment. We have enclosed an additional copy of the EIS document for your review to meet the interagency consultation requirements of the Endangered Species Act, Section 7. This is a joint EIS/EIR document supporting the Navy property disposal and subsequent Port of Oakland reuse of FISCO. Pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510 Title XXIX, and the specific base closure decisions approved by Congress in September 1995, the Navy Fleet and Industrial Supply Center is scheduled for closure in September 1998.

FISCO is a heavily urbanized industrial port area. The presence and status of endangered and threatened species on and adjacent to FISCO is described in Chapter 3 of the EIS/EIR, the Environmental Consequences of the Navy action of the FISCO property disposal is described in Chapter 4, and the Environmental Consequences of Port of Oakland reuse are described in Chapter 5. To expedite this consultation, we request consultation only on the Navy Disposal alternative, and the Port of Oakland Reduced Harbor Fill reuse alternative at this time. This is consistent with your previous request that we consult on a minimum number of alternatives to expedite your review.

We request your written concurrence with our determination provided the mitigation measures as identified in the draft EIS/EIR are implemented as described that the Navy property disposal and subsequent community reuse of FISCO will have no adverse affect on any federally threatened or endangered species under your cognizance. As noted in the draft EIS/EIR, site specific Port dredging and in-water construction activities may require further coordination with your office and the Army Corps of Engineers.

We request you respond by April 22, 1997, so that your concurrence is received by the end of the draft EIS/EIR comment period. Thank you for your assistance on this Navy project. For additional information on the Draft EIS/EIR our point of contact is: Mr. Gary Munekawa at the address shown above, telephone 415-244-3022. I may be reached at 415-244-3008 regarding the Endangered Species Act, Section 7, consultation.

Sincerely,

Douglas R. Pomeroy Group Leader, Base Conversion/Biology Section Environmental Planning Branch

copy to: Port of Oakland (Loretta Meyer)

Enclosure



United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

Ecological Services Sacramento Field Office 3310 El Camino Avenue, Suite 130 Sacramento, California 95821-6340

1-1-97-I-1125

April 24, 1997

Mr. Douglas R. Pomeroy Environmental Planning Branch Department of the Navy Engineering Field Activity, West Naval Facilities Engineering Command 900 Commodore Drive San Bruno, CA 94066-5006

Subject: Draft Environmental Impact Statement/Environmental Impact Report for the Disposal and Reuse of the U.S. Navy's Fleet and Industrial Supply Center, Oakland, County of Alameda, California

Dear Mr. Pomeroy:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS) for the Disposal and Reuse of the U.S. Navy's Fleet and Industrial Supply Center, Oakland (FISCO) in Alameda County, California. In your transmittal letter, you requested our concurrence with your determination that the proposed Navy property disposal, and subsequent community reuse of FISCO by the Port of Oakland under the Reduced Harbor Fill reuse alternative, would not adversely affect any federally listed species. Based upon our review of the Draft EIS, we cannot concur with your determination for the proposed action.

The Draft EIS states that a detailed analysis of impacts to the endangered California least tern would be conducted in the future by the Port of Oakland and mitigation measures developed to compensate for identified impacts. Draft EIS confines this analysis, and development of possible mitigation measures, to those impacts associated with increased turbidity and in-water construction activity during the least term nesting season resulting from the proposed action. However, the Service is concerned about a number of other potential adverse effects to least terms from the proposed disposal and reuse of FISCO. These include, but are not limited to: (1) permanent and temporary loss or degradation of least term foraging habitat, (2) predation threats on the nesting colony site at Naval Air Station Alameda and in existing and created foraging areas in the FISCO area, (3) human disturbance from public access provided under the reuse plan in areas proposed to be created as least tern foraging or roosting areas, and (4) increased contaminant loading from development runoff associated with increased facilities constructed and operated under the reuse plan. Finally, we are concerned that selection of a particular reuse alternative in the Record of Decision for the Final Environmental Impact Statement/Environmental Impact Report could preclude

opportunities to avoid or minimize potential adverse effects to least terms identified in a detailed impacts analysis.

Presently, the Service is working closely with representatives from the Port of Oakland to design adequate studies to determine the full array and extent of potential adverse effects to least terms from implementation of reuse alternatives identified in the Draft EIS. However, until these studies are completed, and we can analyze the results to determine reuse modifications and/or mitigation measures necessary to conserve least terns, it is premature and imprudent for us to concur with your determination that the proposed action is not likely to adversely affect the California least tern. However, to facilitate the environmental review process for FISCO, we request that the Navy initiate a programmatic section 7 formal consultation under requirements of the Endangered Species Act of 1973, as amended. In this programmatic consultation, we envision that we would consult on the FISCO property disposal by the Navy and all community reuse alternatives. The programmatic consultation would address information needs, timelines, and processes for subsequent section 7 consultations. Should impact analysis studies being designed and implemented by the Port of Oakland identify potential adverse effects to any federally listed or proposed species with selection of a preferred reuse alternative, then either the Navy could reinitiate formal consultation or a new consultation could be initiated by another Federal lead agency. The Service would not be precluded from determining in any future formal consultation that the preferred alternative would not ensure conservation of any federally listed or proposed species.

If you have any questions, please contact Jim Browning at (916) 979-2739 (Ext. 439).

Sincerely,

Wayne S. White
Field Supervisor
U.S. Department of the
Interior Coordinator

Dah a. Piens

cc: Reg. Dir., (ARD-ES), Portland, OR
 SFBNWR, Project Leader, Newark, CA (M. Kolar)
 Dir., CDFG, Sacramento, CA
 Port of Oakland, Oakland, CA (J. Amdur/J. Zaitlin)
 L. Feeney, Alameda, CA



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST NAVAL FACILITIES ENGINEERING COMMAND 900 COMMODORE DRIVE SAN BRUNO, CALIFORNIA 94066-2402

IN REPLY REFER TO:

5090.1B 1852DP/P7-1267 28 April 1997

Mr. Wayne White Field Supervisor U.S. Fish and Wildlife Service **Ecological Services** 3310 El Camino Avenue - Suite 130 Sacramento, CA 95821-6340

Dear Mr. White:

We are writing in regard to the Draft Environmental Impact Statement/Environmental Impact Report for the Disposal and Reuse the Fleet and Industrial Supply Center, Oakland, and Port of Oakland Vision 2000 Maritime Development. As described in your letter of 24 April 1997, you do not concur with our determination of no adverse affect regarding the potential impacts the disposal and reuse of this property on endangered and threatened species. We therefore request an Endangered Species Act, Section 7, consultation be initiated at this time using the existing information in the Draft Environmental Impact Statement/Environmental Impact Report, as the Biological Assessment for this consultation. We request that you complete this consultation as quickly as possible as we plan to issue a Final Environmental Impact Statement/Environmental Impact Report by July 1997, and issue a Record of Decision in August 1997.

Thank you for your prompt assistance. For further information contact our environmental project manager Mr. Gary Munekawa, 415-244-3022, or myself at 415-244-3008.

Sincerely,

Douglas R. Pomeroy

Group Leader, Base Conversion/Biology Section

Environmental Planning Branch

Copy to:

Port of Oakland (Loretta Meyer) Tetra Tech (Terry Witherspoon)

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

1-1-97-F-85

June 26, 1997

Mr. Douglas R. Pomeroy
Environmental Planning Branch
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Subject: Endangered Species Formal Consultation on the Proposed Disposal

and Reuse of the U.S. Navy's Fleet and Industrial Supply

Center, Oakland, County of Alameda, California

Dear Mr. Pomeroy:

This document provides a programmatic formal consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act), for a proposal by the U.S. Department of the Navy (Navy), for disposal of Navy property and reuse by the Port of Oakland (Port) of the Fleet and Industrial Supply Center, Oakland (FISCO), California. This is in response to your request for formal consultation on the proposed action, which was received by the U.S. Fish and Wildlife Service (Service) on April 30, 1997. This document includes the Service's biological opinion on the effects of that proposed action on the endangered California least term (Sterna antillarum (=albifrons) browni). The Service has determined that the proposed action is not likely to adversely affect the endangered California brown pelican (Pelecanus occidentalis californicus).

This biological opinion is based on the (1) <u>Draft Environmental Impact</u>

<u>Statement/Environmental Impact Report for the Disposal and Reuse of Fleet and Industrial Supply Center. Oakland, and Vision 2000 Maritime Development (volumes I and II) dated March 1997 (Draft EIS); and (2) additional oral and written communications between representatives of the Navy, Port, and Service.</u>

This biological opinion identifies the need to develop additional information from studies for the analysis of the full extent and magnitude of potential adverse effects to the least tern, or any other federally listed or proposed species, from implementation of any of the reuse alternatives, and other interrelated/interdependent projects, by the Port. Should impact analysis studies being designed and implemented by the Port identify potential adverse effects to any federally listed or proposed species with selection and implementation of any of the proposed reuse alternatives, and other interrelated/interdependent projects, then either (1) the Navy shall reinitiate formal consultation, (2) a new consultation shall be initiated by

another Federal lead agency, or (3) the Port will need to apply for a permit pursuant to section 10(a)(1)(B) of the Act.

CONSULTATION HISTORY

On March 12, 1997, the Service received the Navy's March 6, 1997, request that we concur with the Navy's determination that the proposed Navy property disposal, and subsequent reuse of the FISCO by the Port under the reduced harbor fill alternative, would not adversely affect any federally listed On April 24, 1997, we notified the Navy in writing that we could not concur with their determination and we requested that the Navy initiate a programmatic section 7 formal consultation under requirements of the Act for the proposed disposal and reuse of the FISCO. On April 30, 1997, the Service received the Navy's April 28, 1997, request for initiation of section 7 formal consultation, under the Act, for the proposed disposal and reuse of the FISCO. Per a request from the Port, we have expedited the preparation and completion of this opinion so that they could meet predetermined grant approval deadlines for the reuse of the FISCO.

BIOLOGICAL OPINION

Description of the Proposed Action

The proposed action is disposal and reversion of Navy property, including structures, at the FISCO, and reuse of the FISCO under the Port's Vision 2000 Program. About 392 acres of the FISCO would revert to the Port's ownership after Navy disposal of the property. In May 1940, 392 acres at the FISCO site were deeded to the Navy by the City of Oakland with a reversionary clause requiring that the Navy revert the property to the Port after the property is no longer used for Federal military purposes. An additional 136 acres at the FISCO site have been acquired by the Navy and are not subject to any reversionary requirements; these lands are referred to as the nonreversionary property. Most of the nonreversionary property is currently leased to the Port on a 50-year lease and the remainder of this property is anticipated to be leased to the Port by the time of operational closure of the FISCO by the Navy in 1998. The Navy has discretionary authority to convey the entire nonreversionary property directly to the Port upon operational closure of the FISCO.

The 528-acre FISCO lies within the municipal limits of the City of Oakland (City) in Alameda County and is within the planning jurisdiction of the Port, which is an independent agency of the City and responsible for planning, developing, and administering the City's marine terminal facilities for waterborne commerce. The FISCO site is essentially flat and developed with an array of industrial, transportation, and maritime uses. by the Oakland Middle Harbor to the west, 7th Street to the north, Middle Harbor Road and Southern Pacific West Oakland Railyard to the east, and the Union Pacific West Oakland Intermodal Railyard to the south.

The no action alternative by the Navy would result in the Navy retaining ownership of the 136 acres of nonreversionary Navy property under caretaker status. Under the no action alternative, the Navy would continue leasing the 528-acre FISCO site to the Port under the current 50-year lease agreement authorized by special legislation with allowances to the Port to demolish existing structures as needed. The 392 acres of reversionary Navy property automatically would revert to the Port upon operational closure in 1998. Conveyance to the Port of the 136 acres of nonreversionary Navy property would not occur under the no action alternative. Contamination cleanup on the FISCO site would be continued by the Navy. Under the no action alternative, the remaining 290 acres of non-Navy property would not be developed as part of the Port's Vision 2000 Program. Existing railroad operations would continue, using both Southern Pacific and Union Pacific railyards, in their present configurations and locations. Burlington Northern-Santa Fe container traffic through the Port facilities would continue along Interstate 80. Existing marine terminal operations also would continue.

Under the proposed action of property disposal at the FISCO by the Navy, 136 acres of nonreversionary Navy property would be conveyed to the Port. Caretaker, environmental cleanup, and leasing actions associated with Navy disposal of nonreversionary Navy property would continue after operational closure and prior to property disposal. Property disposal by the Navy would precede implementing each of the Port's reuse plan alternatives.

The Port's reuse plan, the Vision 2000 Program, is a schedule of phased improvements or development projects to modernize and expand the Port's facilities. The Vision 2000 Program includes (1) 136 acres of nonreversionary Navy property, (2) 392 acres of reversionary Navy property, and (3) 290 acres of non-Navy property. The Vision 2000 Program, proposes development of ship, rail, and truck cargo handling facilities to meet the anticipated demand for transportation services in San Francisco Bay (Bay) and northern California and to national markets. The Vision 2000 Program would include development of public waterfront access and a marine habitat enhancement area in the Oakland Middle Harbor, and would expand and upgrade the existing marine, rail, and truck access facilities. The Vision 2000 Program proposes four alternatives for reuse of the FISCO by the Port: (1) maximum marine terminal/maximum rail terminal alternative, (2) minimum marine terminal/minimum rail terminal alternative, (3) maximum marine terminal/minimum rail terminal alternative, and (4) reduced harbor fill alternative. Although not discussed in the Draft EIS, the Port plans to deepen the Oakland Inner Harbor to 50 feet below mean lower low water (MLLW) as part of the proposed expansion of the terminal areas under the reuse alternatives.

The maximum marine/maximum rail alternative would maximize development of a joint intermodal rail terminal to serve Union Pacific, Southern Pacific, and Burlington Northern-Santa Fe railroads, and new marine terminals and ancillary facilities. The proposed rail terminal would occupy about 380 acres. This alternative would involve construction of five 1,200-foot berths and marine terminals along the Oakland Inner Harbor, covering about 260 acres. This level of proposed development would require relocation of the Harbor Transportation Center and Middle Harbor Road. Demolition and site preparation would be required prior to the construction of the proposed facilities.

The maximum marine/maximum rail alternative includes development of a 206-acre public waterfront access and marine habitat enhancement area in the Oakland Middle Harbor. About 29 acres would be available for public access along the shoreline and at the Western Pacific mole, while the remaining 177 acres would be dedicated to habitat enhancement. This development would provide public access for pedestrians, bicyclists, and vehicles along the entire perimeter of the Middle Harbor and would include areas for spectator sports, informal recreation, nature study, and a marina. Habitat creation and restoration would be developed along the northern and southern perimeters of Middle Harbor. Parking also would be provided to accommodate more than 400 vehicles.

Under the maximum marine/maximum rail alternative, about 17 acres of fill would be removed from along the Oakland Inner Harbor, and about 22 acres of covered fill (i.e., pile-supported fill over water) would be removed from the Oakland Middle Harbor. Placed fill would include hard materials, primarily in the Oakland Middle Harbor for marine and rail terminal development, and fill over water, such as for the proposed marine terminal berths in the Oakland Inner Harbor. For this alternative, the net total amount of solid fill would increase by about 42 acres and the net total amount of pile-supported fill would be reduced by about eight acres. Subtidal fill would be placed in the Oakland Middle Harbor to raise the bottom to an average depth of about minus five to six feet below MLLW to allow for possible subtidal marine habitat enhancement, such as eelgrass habitat.

The minimum marine/minimum rail alternative would involve development of about 190 acres of new rail terminal to serve the Burlington Northern-Santa Fe Railroad. Grade-separated access at the main gate would route truck traffic over rail tracks and 7th Street into the rail terminal. assumes that the present Union Pacific intermodal operations would remain on the waterfront property it currently leases from the Port along the Oakland Inner Harbor and that the Southern Pacific operations would remain in their current configuration and location. This alternative also would involve developing an approximate 100-acre marine terminal in the Oakland Middle Harbor, along with a channel and turning basin. In addition, new marine terminal uses would be constructed on about 27 acres in the Oakland Outer Harbor on Port and Oakland Army Base property. The Navy has no disposal authority over the Oakland Army Base property and any decision allowing Port use of this land would require separate approval from the U.S. Department of Army (Army). Demolition and site preparation would be required prior to the construction of proposed facilities.

The minimum marine/minimum rail alternative includes development of a 85-acre public waterfront access and marine habitat enhancement area in the northern portion of the Oakland Middle Harbor. About 14 acres would be available for public access at Point Arnold, while the remaining 71 acres would be dedicated to habitat enhancement. This development would provide public access along the northern perimeter of the Middle Harbor and would include areas for recreational sports facilities, such as baseball and softball, areas for passive recreation such as picnicking, and a promenade along Point Arnold. Habitat creation and restoration would be developed along the northern edge of Middle Harbor, and parking would be provided to accommodate about 250 vehicles. Under the minimum marine/minimum rail alternative, about

60 acres of net fill would be placed in portions of the Oakland Middle Harbor and in the Oakland Outer Harbor to construct proposed marine terminals. About 29 acres of pile-supported fill would be removed from the Middle and Outer Harbors and replaced with two new berths. For this alternative, the net total amount of solid fill would increase by approximately 60 acres and the net total amount of pile-supported fill would be reduced by about 23 acres.

The maximum marine/minimum rail alternative would maximize marine terminal development along the Oakland Inner Harbor and would involve development of a 190-acre new railroad intermodal terminal, similar to the minimum marine/minimum rail alternative, to serve the Burlington Northern-Santa Fe Railroad. Support tracks would be located on a portion of the Oakland Army The Navy has no disposal authority over the Oakland Army Base property and any decision allowing Port use of this 11-acre area would require separate approval from the Army. Grade-separated access to the new rail terminal at the main gate would route truck traffic over rail tracks and 7th Street, without impeding traffic along 7th Street. The maximum marine/minimum rail alternative assumes that Union Pacific would consolidate all of its current intermodal operations into Southern Pacific's facilities. New marine terminals would occupy about 290 acres along the Oakland Inner Harbor and would include five new 1,200-foot berths. This marine terminal development would require relocation of the Harbor Transportation Center. Demolition and site preparation would be required prior to the construction of proposed facilities.

The maximum marine/minimum rail alternative would include development of a 239-acre public waterfront access and marine habitat enhancement area in the Oakland Middle Harbor. About 39 acres would be available for public access along the shoreline and at Point Arnold and the Western Pacific mole, while the remaining 200 acres would be dedicated to habitat enhancement. This development would provide public access along the entire perimeter of the Middle Harbor and would include areas for spectator sports and informal recreation at the Western Pacific mole and Point Arnold. Habitat creation and restoration would be developed along the northern and eastern perimeters of Middle Harbor. Parking would be provided to accommodate about 270 vehicles. Similar to the maximum marine/maximum rail alternative, about 17 acres of hard fill would be removed from the Oakland Inner Harbor, and about 22 acres of covered fill would be removed in the Oakland Middle Harbor for marine terminal development. Placed fill would include hard materials, primarily in the Oakland Middle Harbor for marine terminal development, and covered fill, such as for the proposed marine terminal berths in the Oakland Inner Harbor. this alternative, the net total amount of solid fill would increase by about 18 acres and the net total amount of pile-supported fill would be reduced by about eight acres.

The reduced harbor fill alternative would involve development of about 320 acres of intermodal rail terminal. The new rail terminal would serve the Union Pacific, Southern Pacific, and Burlington Northern-Santa Fe railroads. Grade-separated access to the new rail terminal at the main gate would route truck traffic over rail tracks and 7th Street without impeding traffic along 7th Street. This alternative also would include development of about 275 acres of marine terminal space and five new berths along the Oakland Inner

Harbor. This proposed development would require relocation of the Harbor Transportation Center and Middle Harbor Road. Demolition and site preparation would be required prior to the construction of proposed facilities.

The reduced harbor fill alternative would include development of a 227-acre public waterfront access and marine habitat enhancement area in the Oakland Middle Harbor. About 31 acres would be available for public access along the shoreline and at Point Arnold and the Western Pacific mole, while the remaining 196 acres would be dedicated to habitat enhancement. development would provide public access along the entire perimeter of the Middle Harbor and would include areas for spectator sports at Point Arnold and informal passive recreation, such as picnicking, hiking, and kite flying at the Western Pacific Mole. Habitat creation and restoration would be developed along the eastern and southern perimeters of Middle Harbor. Parking would be provided to accommodate about 150 vehicles. Compared to the other three alternatives, the reduced harbor fill alternative requires the least net amount of solid fill in the Inner and Middle harbors to construct on-site transportation infrastructure and results in a reduction of nine acres. net total amount of pile-supported fill would be reduced by about eight acres. The Oakland Inner Harbor would be expanded to an approximate width of 730 feet at the northern end of the proposed marine terminal area. As a result, approximately 44 acres of hard fill would be removed from the Oakland Inner Harbor, while about 22 acres of covered fill would be removed in the Oakland Middle Harbor. Placed fill would include about 35 acres of hard materials, primarily in the Oakland Middle Harbor for development of marine terminals, and approximately 14 acres of covered fill, such as for the proposed marine terminal berths in the Oakland Inner Harbor.

Species Account/Environmental Baseline

California Least Tern

The California least tern (least tern) was federally listed as endangered in 1970 (35 FR 1604). California least terns nest primarily in coastal areas from San Luis Obispo County south to San Diego County. The only nesting area for least terns north of San Luis Obispo County is in the Bay. In recent years, only one site in the Bay at Naval Air Station Alameda (NAS Alameda), just south of and adjacent to the FISCO site, has supported nesting least terns. There are two other nesting sites in the Bay area, but the Oakland Airport site has not been used in years and the Pacific Gas and Electric Pittsburg site supports only 1 to 3 pairs each year. Therefore, the NAS Alameda site currently represents the entire Bay area population and is the most northern of least tern breeding colonies by about 178 miles (Caffrey 1995). Because of its northern location, the NAS Alameda site is relatively unaffected during El Niño years when many southern California sites experience pronounced breeding failure resulting from limited food availability.

The least tern breeding site at NAS Alameda has played a significant role in recent increases in the number of least terns throughout California. The NAS Alameda site is consistently one of the most successful sites in California, mainly because the site has not been plagued by high levels of predation and human disturbance during most years, which predominate at most other least

tern sites in California (Caffrey 1995). In 1996, an estimated 208 pairs of least terms nested at the colony, and at least 233 young fledged successfully (Collins 1996). By producing large numbers of fledglings each year, the colony adds large numbers of potential new breeding birds to the statewide population (this site is one of the most important "source" populations in California serving to balance out losses at many "sink" locations throughout the state). Between 1987 and 1994, the NAS Alameda site supported 5 to 6 percent of the statewide breeding population out of 35 to 40 sites each year, but produced an average of 10.6 percent of the total number of fledglings produced statewide in each of those years (Caffrey 1995). Offshore water around NAS Alameda and the FISCO contains extensive, generally productive foraging habitat areas for least terms breeding at the NAS Alameda site. The nesting season typically extends from early mid-April through August at NAS Alameda. In the Bay, least terns typically leave the nest site at NAS Alameda after the young have fledged. The adults and fledglings utilize salt ponds and other Bay habitats as post-breeding foraging and roosting areas until September, when the birds migrate south. Several salt ponds in the south Bay provide important foraging and roosting areas for least terns during the post-breeding season which generally extends from late June through the middle of September.

Effects of the Proposed Action

The Draft EIS identifies the following impacts to least terms from each of the proposed reuse alternatives: (1) reduced foraging ability and/or opportunities from short-term turbidity associated with dredging and construction of new berths in the Oakland Inner Harbor and (2) removal of about 200 square feet of eelgrass beds within the Oakland Inner Harbor from construction of the proposed marine terminal. The Draft EIS states that a detailed analysis of impacts to the least tern would be conducted in the future by the Port and mitigation measures developed to compensate for identified impacts. The Draft EIS confines this analysis, and development of possible mitigation measures, to those impacts associated with increased turbidity and in-water construction activity during the least tern nesting season resulting from the proposed action. The loss of eelgrass beds within the Oakland Inner Harbor would be mitigated with the proposed creation of eelgrass beds in the Oakland Middle Harbor. According to the Draft EIS, no impacts to least terns are anticipated from the development of the Marine Area Enhancement Area within the Oakland Middle Harbor.

The Service has identified a number of other potential adverse effects to least terms from the proposed reuse of the FISCO and other interrelated/interdependent projects, including deepening of the Oakland Inner Harbor channel and berthing areas. These include, but are not limited to: (1) permanent and temporary loss or degradation of least term foraging habitat from deepening of the Oakland Inner Harbor, (2) predation threats on the nesting colony site at NAS Alameda and in existing and created foraging areas in the FISCO area, (3) human disturbance from public access provided under the reuse plan in areas proposed to be created as least term foraging or roosting areas in the Oakland Middle Harbor, and (4) increased contaminant loading from development runoff associated with increased facilities constructed and operated under the reuse plan. In addition, potential adverse effects to

federally listed or proposed species or their critical habitat could occur from the disposal of dredged material associated with deepening of the Oakland Inner Harbor channel, depending upon the site(s) ultimately selected for disposal of dredged material. Presently, the Port is implementing studies on, but not limited to, current least tern foraging use and potential impacts to least tern foraging areas in the FISCO area. The Port will continue to develop and implement appropriate studies to determine the full array and extent of all potential adverse effects to least terms and other federally listed or proposed species from implementation of reuse alternatives identified in the Draft EIS, and other interrelated/interdependent projects. However, until these studies are completed, and the results can be fully analyzed by the Service, we are unable to make a determination on the magnitude of potential adverse effects on least terms from implementation of any of the proposed reuse alternatives, and other interrelated/interdependent projects. The Service also is unable to evaluate the adequacy of any potential avoidance, minimization, or other mitigation measures that may be proposed by the Port until such studies are completed.

Cumulative Effects

Cumulative effects are those impacts of future non-Federal actions affecting listed species that are reasonably certain to occur in the action area. Future Federal actions are subject to the consultation requirements under section 7 of the Act and, therefore, are not considered cumulative to the proposed action.

The most serious cumulative effect on least terms in the Bay is the degradation of the Oakland International Airport nesting site as a result of red fox predation and vegetation growth over several years. Long-term loss of the Oakland Airport nesting site would leave only one nesting site in the Bay at NAS Alameda, a military base operationally closed in April 1997. The future of the Alameda nesting site is highly dependent on development and management proposals currently being perfected. The current situation with only one viable nesting site in the Bay makes this endangered species highly vulnerable to stochastic extinction in the Bay.

Conclusion

After reviewing the current status of the California least tern, the environmental baseline, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the disposal of Navy property at the FISCO, as proposed, is not likely to jeopardize the continued existence of the endangered California least tern. Lacking information to fully analyze the extent and magnitude of potential adverse effects to the California least tern, or any other federally listed or proposed species or their critical habitat, from implementation of any of the reuse alternatives for the FISCO, and other interrelated/interdependent projects, by the Port, the Service is unable to make a conclusionary decision on whether the implementation of any of the reuse alternatives, and other interrelated/interdependent projects, would jeopardize the continued existence of the endangered California least tern or any other federally listed or proposed species, or adversely modify or destroy critical habitat. No

critical habitat has been designated for the least tern, therefore, none will be affected for this species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

Amount or Extent of Take

For the California least tern, we anticipate that no incidental take of this species would occur as a result of the proposed disposal of Navy property at the FISCO. Furthermore, because information is lacking at this time to fully analyze the extent and magnitude of potential adverse effects to the California least tern, or any other federally listed or proposed species or their critical habitat, from implementation of any of the reuse alternatives for the FISCO, and other interrelated/interdependent projects, by the Port, we are unable to quantify the amount of incidental take of the least tern, or any other federally listed or proposed species, that may occur from implementation of any of the reuse alternatives. Therefore, no incidental take is authorized for the implementation of any of the reuse alternatives, or variations thereof, for the FISCO, and other interrelated/interdependent projects, by the Port in this biological opinion.

The Service anticipates that forms of incidental take to federally listed or proposed species, which could occur as a result of reuse of the FISCO and other interrelated/interdependent projects, including deepening of the Oakland Inner Harbor channel and berthing areas, and the disposal of dredged material, by the Port, could include, but not be limited to, the following:

- Permanent and temporary loss or degradation of least tern foraging habitat from deepening of the Oakland Inner harbor,
- Predation threats on the least tern nesting colony site at NAS Alameda and in existing and created least tern foraging areas in the FISCO area,

- Human disturbance to least terms from public access provided under the reuse plan in areas proposed to be created as least term foraging or roosting areas in the Oakland Middle Harbor,
- Increased contaminant loading to least term foraging areas from development runoff associated with increased facilities constructed and operated under the reuse plan, and
- 5. Potential adverse effects to federally listed or proposed species from the disposal of dredged material associated with the proposed action, depending upon the site(s) ultimately selected for disposal of dredged material.

Effect of the Take

In the accompanying biological opinion, the Service has determined that there is no anticipated take associated with the proposed disposal of Navy property at the FISCO, and that disposal is not likely to jeopardize the continued existence of the endangered California least tern. The Service is unable to make a conclusionary decision on whether the implementation of any of the reuse alternatives, and other interrelated/interdependent projects, would jeopardize the continued existence of the endangered California least tern or any other federally listed or proposed species, or adversely modify or destroy critical habitat. No critical habitat has been designated for the least tern, therefore, none will be affected for this species.

Reporting Requirements

The Service shall be notified within twenty-four (24) hours of the finding of any injured or dead California least term or their eggs, or any unanticipated damage to California least term habitat associated with the proposed action. Notification must include the date, time, and precise location of the specimen/incident, and any other pertinent information. The Service contact persons is this office's Endangered Species Division are Jim Browning or Mike Thabault (telephone 916/979-2725). Any dead or injured specimens shall be reposited with the Service's Division of Law Enforcement, 3310 El Camino Avenue, Suite 140, Sacramento, California 95821-6340 (telephone 916/979-2987).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that may be used to help implement recovery plans and recovery actions, or to develop information.

The Service recommends that the Navy continue to effectively protect and manage the least term nesting colony at NAS Alameda while the property remains in Navy ownership to help meet the recovery objectives for this species.

REINITIATION NOTICE

This concludes formal consultation and conference on the proposed action outlined in your April 28, 1997, request for formal consultation. As provided in 50 CFR section 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, as previously described; (2) new information reveals effects of the actions that may affect listed species or critical habitat in a manner that was not considered in this opinion; (3) the agency action is substantially modified in a manner that causes an effect to listed species that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. Should impact analysis studies being designed and implemented by the Port identify potential adverse effects to any federally listed or proposed species with selection and implementation of any of the proposed alternatives, and other interrelated/interdependent projects, then either (1) the Navy shall reinitiate formal consultation, (2) a new consultation shall be initiated by another Federal lead agency, or (3) the Port will need to apply for a permit pursuant to section 10(a)(1)(B) of the Act. The Service shall not be precluded from determining in any future formal consultation that any of the proposed reuse alternatives, and other interrelated/interdependent projects, fail to ensure conservation of any federally listed or proposed species. Service also shall not be precluded from identifying any reasonable and prudent alternatives or measures that ensure conservation of any federally listed or proposed species.

If you have any questions regarding this biological opinion, please contact Jim Browning or Michael Thabault in this office's Endangered Species Division at (916) 979-2725.

Sincerely,

Llile a. Pearse For Wayne S. White

Field Supervisor

cc: Reg. Dir., (ARD-ES), Portland, OR SFBNWR, Newark, CA (J. Buffa) Dir., CDFG, Sacramento, CA Port of Oakland, Oakland, CA (J. Amdur/J. Zaitlin) L. Feeney, Alameda, CA L. Collins, Berkeley, CA

LITERATURE CITED

Caffrey, C. 1995. Characteristics of California least term nesting sites associated with breeding success or failure, with special reference to the site at the Naval Air Station, Alameda. Final report prepared for the U.S. Navy under contract no. N62474-94T-00302. 69 pp.

Collins, L.D. 1996. California least tern nesting season at the Alameda Naval Air Station 1996. Report prepared for the U.S. Navy under contract no. N62474-96-M-6043. 65 pp.



BIOLOGICAL FIELD SERVICES

WILDLIFE CONSULTATION - DOCUMENTATION - PROTECTION

May 5, 1997.

Jody Zaitlin Environmental Department Port of Oakland 530 Water Street Oakland. CA 94607

Dear Jody,

The question of a burrowing owl at Middle Harbor Park came to my attention five or six years ago. I visited the park at that time and found no owl. Middle Harbor Park, located on the north side of the Oakland/Alameda Estuary is less than 0.7 acres including the paved parking area and a portion of the access road. park has a small pier and is used primarily for fishing. time visitors and families frequent the park, as well. The small park can be a very busy place. It is situated between the American President Lines' port/dock facilities and the Union Pacific Railroad yard. Adjacent areas are open water or industrial, mostly paved land. Foraging opportunities for burrowing owls in this area appear to be very poor at best. Unfortunately, neither the record for the owl siting nor my visit in the early 1990s is available, so the information is now anecdotal.

From January through April of 1997 I've made 16 visits to Middle Harbor Park performing bird surveys. Habitat at this park includes a few trees, a small grassy area with picnic table, a few large rocks along the west end of the grass, the pier, and pavement. There are small holes, 3 to 8 cm, under some of the rocks, and openings in rip-rap bordering the water, but none appear suitable for burrowing owls. No burrowing owl sign has been detected. No ground squirrels have been seen during any of the 1997 visits.

Middle Harbor Park has never appeared to be a location that would likely support a burrowing owl for any length of time. The nearest burrowing owl habitat to the Middle Harbor Park is located at the now closed Naval Air Station in Alameda.

Sincerely

Leora R. Feeney

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ENTRIX

Pro 590 Yonaclo Valley Road Suite 200 Walnut Creek, CA 94596 (510) 935-9920 (510) 935-5368 FAX

May 12, 1997

Mr. Jon Amdur
Port of Oakland Environmental
530 Water Street
Oakland, CA 94607

Re: Shallow Subtidal Habitats West of U.P. Mole near Middle Harbor

Dear Jon.

As you know, on 9 May 1997 ENTRIX and Port personnel investigated two sub-areas of Site G at the southern border of Middle Harbor (Figure 1). The major objective of the survey was to characterize a hard-bottom area immediately east of the small "lighthouse" off the U.P. mole. A second objective was to investigate the shallow subtidal area near shore at the mole and the eel grass area off the NAS runway (site D). We also surveyed the eastern two thirds (approximately) of the riprap along the northern shore of Inner Harbor Channel for signs of eel grass.

The Inner Harbor channel was surveyed from about 0715 to 0730. The hard bottom snorkeling surveys were done from approximately 0800 to 0930, which spanned the low tide of (nominally) -0.9 ft. The nearshore area at the mole was surveyed from about 0930 to 1045, and Site D was surveyed from about 1050 to 1115.

The hard-bottom area near the lighthouse appeared to be the remnant of a roadway or other access structure, possibly armored at one time with concrete rubble and other debris. Algal cover was extensive, consisting mainly of Sargassum muticum, Cryptopleura ruprechtiana, Polyneura latissima, Chondracanthus harveyanus, and Ulva sp. cf. lobata. (Algal identifications by Dr. Dick Moc, Berkeley Herbarium). One fish (unidentified sculpin) and several red rock crab (Cancer productus) were observed in addition to many attached invertebrates including mussels and oysters. Visibility was fair-to-poor, but a useful underwater video recording was made of the major features.

Eel grass (Zostera marina) was discovered near the shoreline at the U.P. mole, in an area where obstacles had prevented trawling and seining during earlier visits. The plants were distributed at an approximate elevation of -4 to -6 ft along an approximately 100-ft stretch of shoreline (Figure 2). Most plants were single or in small clumps. The largest clump observed consisted of an approximately 3 ft by 6 ft mass of very dense vegetation, some of it fouled by a filamentous, reddish alga. Attempts to obtain video footage of the eel grass were unsuccessful. Still photos (as yet undeveloped) partially documented the



location of some of the first plants encountered. The bottom consisted of silty sand, rocky debris, and the remains of broken-off wooden pilings.

The eel grass at Site D covered an extensive area of several hundred feet just off the sand beach, as witnessed during a beach seine suyrvey on 30 April. A specimen consisting of two stems connected to an approximately 5-inch length of rhizome was collected and placed in your custody for later study.

No eel grass was seen in the Inner Harbor Channel.

I will send copies of photos from Site G when they are available.

Sincerely,

ENTRIX. Inc.

Andrew E. Jahn Ph. D. Senior Project Scientist

cc: C. Herrala, K. Merkel attachments

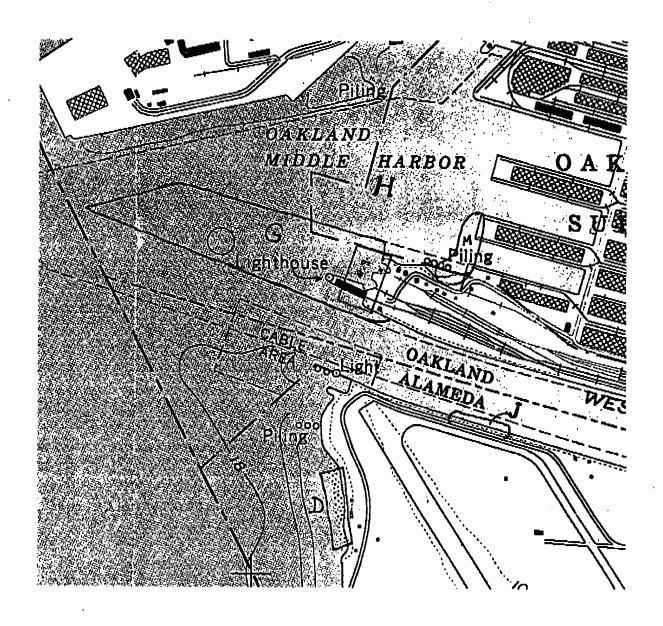


Figure 1.
The area marked
"e.g." is blown
up in Fig. 2.

May 30 From Stole were _1.11 9.911 House 8 Aprox 7 at -0,9 , eelgass -0,97.2

Substrate + mud and rock mix with a Lot of Shell Flagments the northern portion of the bed is saidy with a small supertien or mud-rocks are them about

Figure 2.



APPENDIX I
THE PORT OF OAKLAND AND PORT TENANT
REGIONAL STORM WATER
POLLUTION PREVENTION PROGRAM
MARINE TERMINALS SUB-GROUP

INTRODUCTIO	ON	1
GENERAL APP	PROACH	4
FACILITIES UI	PGRADES AND CAPITAL EXPENDITURES	4
FACILITY MAI	INTENANCE	5
Designated 1	PERSONNEL	5
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	GENERIC STORMWATER POLLUTION PREVENTION PLANS, BEST MANAGEMENT PRACTICES FOR VEHICLE SERVICE FACILITIES	
	TENANTS IN THE PORT OF OAKLAND MARINE TERMINALS SUB- GROUP	

The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program

Marine Terminals Sub-Group

Prepared by
The Port of Oakland
Environmental Department

September 16, 1992

Revisions: June 18, 1993 and April 11, 1994

The Port of Oakland and Port Tenant

Regional Storm Water Pollution Prevention Program

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The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program for the Marine Terminals Sub-Group has been prepared to satisfy the requirements of Section A of Water Quality Order 91-13-DEQ (as amended by Water Quality Order No. 92-12-DEQ), National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001. The present revision of this document and all attachments were prepared under my direction or supervision.

Jon Amdur

Environmental Department

Port of Oakland

- 4- 45

Date

The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program

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Regional Storm Water Pollution Prevention Program Marine Terminals Sub-Group

I. Introduction

In 1987, amendments to the Clean Water Act (CWA) added section 402(p) which established a framework for regulating industrial and municipal storm water discharges under the National Pollutant Discharge Elimination System (NPDES). On November 16, 1990, the Environmental Protection Agency (EPA) published final regulations that established requirements for storm water discharge permits for specific categories of industrial facilities. These categories include shipping, trucking and air transport facilities that conduct vehicle maintenance, or facilities where materials are stored in exposed areas.

The regulations allow authorized states to issue general permits or individual permits to regulate industrial storm water discharge. The California State Water Resources Control Board (Board) has elected to issue a statewide General Industrial Discharge Permit (General Permit) that will cover all industrial discharges except construction activities. To be covered under the State's General Permit, dischargers were required to submit a Notice of Intent (NOI) with the appropriate fees to the Board by March 30, 1992. Port tenants with activities regulated under the General Permit submitted individual NOIs to the Board.

In order to help its tenants and others comply with the new regulations, the Port has organized a working Group (Group) to prepare a storm water monitoring program. The Port is also providing assistance to its tenants in the preparation of the required Storm Water Pollution Prevention Plans (SWPPP), as well as the application of Best Management Practices (BMP). The Group is divided into two sub-groups. The sub-group divisions are based on the members' Industrial Classification and the water body into which they discharge. The two sub-groups consist of the Airport Sub-Group and the Marine Terminals Sub-Group.

In a joint effort between the Port of Oakland and its tenants, a Regional Storm Water Pollution Prevention Plan (RSWPPP) has been developed. This RSWPPP addresses management plans and Best Management Practices (BMPs) that can be implemented uniformly throughout the Port region. Uniformity in management of potential sources of pollution will make compliance easier and can save money on implementation by combining programs. The BMPs have been designed to maximize the benefits and minimize the costs of implementation.

Although a series of "generic" BMPs have been compiled for this program (Appendix A), site-specific BMPs will depend on the type and extent of the activities conducted on site.

Each Port tenant will be furnished a copy of this plan. It is the tenant's responsibility to implement the plans. Additional "Site-Specific" information will be supplied by the tenants and will be included in the appendix of the plans. Site-specific information includes:

- 1. Hazardous Materials Business Plans, which include a list of all the hazardous materials and the approximate amounts used on site. The Hazardous Materials Business Plans are to be prepared in conformance with Chapter 6.95, Section 25504, of the California Health & Safety Code. Section 25504 requires: (1) an inventory of all hazardous substances or chemical products handled by the business; (2) emergency response plans and procedures to be implemented in the event of release of a hazardous material; and (3) provisions to train all employees in safety procedures to be implemented in the event of a release, or threatened release, of hazardous material. The inventory is to contain sufficient information on how and where the hazardous materials are handled.
- 2. A site map showing the site boundaries, buildings, storm drains, fueling facilities, maintenance areas, vehicle washing areas, grease trap locations, and any other pertinent information.
- 3. Spill Prevention Control and Countermeasure (SPCC) plans.
- 4. Records of hazardous materials spills and disposal since 1988 (a good faith effort is expected in recording previous spills and disposal). In addition, maintain records of all employee training related to hazardous materials, spill response, and storm water education.
- 5. Descriptions of material loading, unloading and access areas (including hazardous waste/materials storage areas), existing structural and non-structural control measures (if any), methods of on-site storage and disposal of significant materials, and outdoor storage, manufacturing, and processing of materials.

This component of the RSWPPP covers the Marine Terminals Sub-Group (MTSG). Members of the MTSG are Port of Oakland industrial tenants whose major SIC codes consist of marine terminal operations, trucking and related services (Appendix B); activities in the MTSG are covered by SIC codes 3273, 3799, 4190, 4214, 4412, 4424, 4463, 4491, 4731, 4783; these tenants have submitted individual NOIs to the Board. Storm water from the MTSG members often combines with outside storm water sources and flows into the City of Oakland's storm drain system, which is connected in numerous locations with the Oakland Estuary and San Francisco Bay (Figure 1).

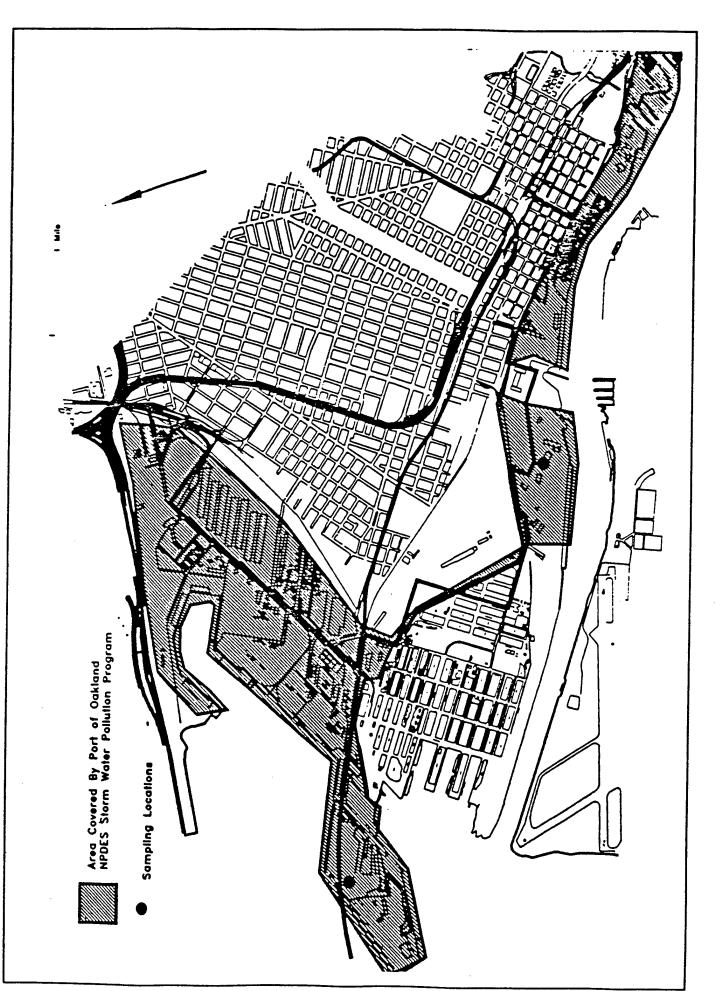


Figure 1: Marine Terminals Area

II. General Approach

Many of the management practices included in this plan are based on BMPs that have been shown to successfully reduce pollutant loads throughout the country. Others have been modified to suit the specific needs of marine terminal operations. The general premise for BMPs is common sense and awareness. The basic approach is as follows:

- Do not allow any discharge to the storm sewer other than rainwater.
- When possible, reduce the amount of hazardous substances used at the site.
- Do as much vehicle maintenance work as possible indoors.
- 4. Store all hazardous substances properly and dispose of all hazardous wastes in accordance with all State, local, and Federal regulations.
- 5. If the facility does not currently have one, prepare a Hazardous Materials Business Plan and a Spill Prevention Control and Countermeasure (SPCC) plan. These plans are required under existing legislation (California Health and Safety Code Chapter 6.95, Section 25500, California Code of Regulations (CCR) Title 22, Section 67120 to 67126 and 67140 to 67145 and Title 40 Code of Federal Regulations (CFR) Part 112). However, SPCC plans are not required if the facility does not handle hazardous wastes and the underground buried storage capacity is 42,000 gallons or less of oil, and the storage capacity, which is not buried, of the facility is 1,320 gallons or less of oil, provided no single container has a capacity in excess of 660 gallons (40 CFR 112.1(d)(2)).
- 6. Maintain records of all employee training, hazardous materials disposal, and spills.
- Use good housekeeping practices.

III. Facilities Upgrades and Capital Expenditures

In a number of instances, facility upgrades will be beneficial in reducing pollutant loads to the Bay, and generally make permit compliance and maintenance easier on the permittee. Low-cost structural modifications, such as low berms around storm drains to collect sediment and to prevent the direct discharge of spilled material to the storm sewer system, could be constructed in the near future.

Other modifications such as hazardous materials storage areas can be expensive to design and construct and would require budgeting. Decisions should be made as to which upgrades would be most beneficial for each facility, and scheduling of the upgrades should be completed and adhered to. In most cases, the tenant will be responsible for facility upgrades.

All upgrade plans should be reviewed and permitted by the Port of Oakland Engineering Department prior to construction. Low-cost items such as tarps, spill prevention equipment, and inexpensive secondary containments, should be purchased as soon as possible.

IV. Facility Maintenance

Standard Port/Tenant lease agreements contain a clause that requires the tenant to maintain the facility. In addition, the agreement stipulates that the tenant must abide by all local, State, and Federal laws and regulations. It is therefore the tenants' responsibility to conduct all maintenance activities associated with the storm drain permit. If a tenant wishes to have the Port maintain the storm drain system as outlined in the RSWPPP, an agreement can be reached that will allow Port maintenance of the drains, with the associated costs passed on to the tenant.

V. Designated Personnel

Each permittee should designate an individual who will be responsible for NPDES permit compliance (Storm Water Compliance Coordinator). This person must have authority to act on the permit requirements and should be fully versed on the NPDES permit and the RSWPPP. Other personnel should be appointed as an alternate and should also have authority to act on NPDES issues.

In many instances, it is beneficial to have a Storm Water Coordination Committee to review current practices and to help in the modification of work habits. The Coordination Committee should consist of the compliance coordinator, the alternate coordinator, supervisors and staff who are expected to perform the BMPs daily. The Coordination Committee may need to meet only once or twice per year, although more frequent meetings are encouraged.

The designated responsible party for each tenant in the Group SWPPP is included in the list of tenants in Appendix B.

VI. Inspections

Annual inspections will be performed by Port personnel to ensure that all members within the group are in compliance with the SWPPP. The Port will conduct these inspections in addition to the regular inspections that are to be conducted by the main storm water

supervisor at each Port tenant activity. The Port inspector(s) are to complete written documentation of the inspections (audit checklists) for each visit and keep the documentation for at least five years.

Appendix A

Generic Storm Water Pollution Prevention Plans

Best Management Practices for Vehicle Service Facilities

Generic Storm Water Pollution Prevention Plans Best Management Practices for Vehicle Service Facilities

1. Storm Drains

Applicable Rule: Storm Drain Protection

Storm drains are designed to carry ONLY rainwater runoff. All other discharges are prohibited. This prohibition includes any fluid from vehicles including fuel, oil, grease, degreasing solutions, coolants, and rinse water from vehicle washing.

- a: Never pour any vehicle fluid into the storm drain system.
- b: Recycle vehicle fluids and all hazardous materials.
- c: If recycling is not possible, all wastes should be properly disposed of as required by State and Federal Regulations (<u>disposal of hazardous materials is covered in the tenant's Hazardous Materials Business Plan</u>).
- d: Where possible, waste reduction/waste minimization plans will be implemented to reduce the generation of potential pollutants.
- e: Prevent the accidental discharge of vehicle fluids or hazardous materials into both the storm sewer and the sanitary sewer systems. Methods for preventing these discharges are covered under Section 2 (Spill Response) and Section 8 (Secondary Containment of Hazardous Substances).
- f: General procedures for the prevention of discharges to the storm and sanitary sewer systems include:
 - In all circumstances where the facility is large enough to accommodate the equipment requiring maintenance, vehicle maintenance work will be performed inside or under covered structures.
 - For equipment that cannot be serviced under covered areas, all maintenance will be
 performed with drip pans or non-permeable tarps under the equipment. In
 addition, where adequate space exists, a bermed area can be constructed that will
 accommodate the vehicle requiring service. Any spills within the bermed area will
 be promptly cleaned up in accordance with procedures outlined in Section 2.

- During dry weather, storm drains can be protected using rubber or plastic mats to seal the drains. In addition, low berms can be constructed upstream of the storm drains.
- g: Train all employees on procedures to reduce storm water pollution.
- h: Label all storm sewer drains STORM DRAIN: STORM WATER DISCHARGE ONLY. Alternately, reiterate storm water runoff awareness during training and safety meetings.
- i: Clean the storm drain catch basins once a year prior to the rainy season. This should be done in the following manner:
 - Inspect the basin for any sheen or petroleum odors.
 - Maintain a record of all storm drain inspections (see enclosed forms).
 - 2. If a sheen or petroleum odor is detected on the standing water or the sediment, you should:
 - Have a certified analytical laboratory test the water and sediment prior to cleaning.
 - If hazardous levels of contamination are detected, contract with a hazardous materials disposal firm for removal.
 - If non-hazardous levels of contamination are found, disposal must be appropriate for the level of contamination.
 - 3. If no sheen or odor is detected, clean out the basin by removing all debris that is accessible (NOTE: DO NOT FLUSH THE SYSTEM WITH WATER).

2. Spill Response

Applicable Rule: Storm Drain Protection

Storm drains are designed to carry ONLY rainwater runoff. All other discharges are prohibited. This prohibition includes any fluid from vehicles including fuel, oil, grease, degreasing solutions, and coolants. Spill response plans will be created for each facility that handles hazardous substances.

Compliance:

a: All spills, both large and small, must be cleaned up immediately. Any employee involved in spill response must be trained in the proper method of responding.

Training must include education on personal safety and methods of handling the materials safely (hazardous materials procedures training). The safety of the employee is the first concern. Proper equipment for spill response for each type of material, solvents, acids, etc., must be provided and must be readily available to the trained employee.

- b: All absorbent material and disposable personal protective gear must be disposed of in accordance with all State and Federal laws.
- If <u>reportable quantities</u> are spilled on site, notification will be made to the appropriate agencies as soon as possible. Depending on the material spilled and whether it enters the Waters of the State, notification will be made to the Oakland Fire Department, Regional Water Quality Control Board, U.S. Coast Guard, the Port of Oakland, California Department of Fish and Game, and any additional contractors required in order to control and clean up the spill. Site-specific spill response plans and phone numbers can be found in the Appendix. <u>- (to be prepared by tenants)-</u>

Sanitary Sewers

Applicable Rule:

Permit Requirements Under East Bay

Municipal Utility District (EBMUD)

EBMUD is responsible for the treatment and discharge of sanitary waste water only. EBMUD does not have the ability to treat non-permitted industrial wastes, nor can they treat storm water runoff. The discharge of any waste chemicals, process water, or storm water to the sanitary sewer system is strictly prohibited. The discharge of any substance other than sanitary wastes must be permitted by EBMUD.

- a: Never dispose of any vehicle fluids, cleaning solvents, or other hazardous substances into the sanitary sewer system.
- b: Recycle vehicle fluids and all hazardous materials.
- c: If recycling is not possible, all wastes should be properly disposed of as required by all State and Federal regulations.
- d: Permanently seal all floor drains connected to the sanitary sewer system within vehicle maintenance areas.
- e: Use only biodegradable detergents in vehicle wash areas (See Section 9).

- f: Do not steam clean engines except in areas that are covered, bermed, and have drainage to the sanitary sewer system through an approved grease trap (See Section 9).
- g: Set up a preventative maintenance schedule for the inspection, cleaning, and proper disposal of all grease trap wastes.

4. Floor Drains

Applicable Rule: Permit Requirements Under East Bay

Municipal Utility District (EBMUD)

EBMUD prohibits the discharge of fluids from vehicle maintenance areas without a permit. Permits may be available for treated discharges to the sanitary sewer system. EBMUD requires that all non-permitted drains within vehicle maintenance areas must be permanently sealed.

- a: Permanently plug all floor drains within vehicle maintenance work areas, OR contact EBMUD to obtain a permit to discharge to the sanitary sewer system. (Port of Oakland tenants must notify the Port Building Permit Department prior to modifying any plumbing).
- b: Clean floors in the following manner:
 - Clean all spills using absorbent material such as sawdust or cat litter.
 - Sweep the floor using absorbent material. Reuse this material for numerous cleanings or for spill cleanup.
 - Mop the floor using biodegradable detergent and dispose of rinse water into sink.
- c: Recycle vehicle fluids and all hazardous materials.
- d: If recycling is not possible, all wastes should be properly disposed of as required by all State and Federal regulations.
- e: Clean all vehicle parts in approved containment/recycling system (see section 5, Parts Cleaning).
- f: Clean up all spills immediately (see section 2, Spill Response).

Parts Cleaning

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Solvents used to clean parts are regulated under State and Federal laws. The discharge of solvents to Waters of the State (surface water or ground water) is a direct violation of the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and other laws. Solvents must be used and stored in a manner to eliminate discharges to water, soil, or air. Used non-solvent cleaners should be disposed of as waste to prevent the discharge of grease, oil, and metals to the environment.

Compliance:

- a: Implement a waste minimization program if possible. By reducing the amount of solvents and degreasers used, it is possible to save money and reduce the possibility of discharges to the environment.
- b: Use self-contained parts washers, which include a storage drum, collection basins, solvent sprayers, splash guards (and in some cases, fume hoods). These washers are leased by companies that will pick up spent solvents and deliver fresh solvents.
- c: All parts should be cleaned in one area set aside for this purpose. This area should be away from any storm sewer and sanitary sewer drains.
- d: It may be practical for companies that use large volumes of solvents to treat the solvent on site for reuse. Concentrated waste water from the recycling process should be tested and disposed of in accordance with all applicable rules and regulations. (On-site recyclers may be subject to California Environmental Protection Agency (Cal EPA) Permit-by-Rule regulations.)

6. Changing Vehicle Fluids

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system.

Compliance:

a: All vehicle fluid changing should be conducted inside when possible.

- b: When circumstances prevent indoor maintenance (e.g., the maintenance of large equipment), non-permeable tarps or drip pans should be used.
- c: Special outdoor maintenance areas can be constructed which slope away from storm drains and into containment areas to facilitate cleanup in the event of a fluid spill.
- d: Purchase or fabricate fluid transfer equipment (e.g., oversized drip pans, drain caddies with funnels and pumps, or pump extraction equipment) that will reduce the chance of spills during transfer. The equipment selected should be specific for the site and need.
- e: Place spill response equipment nearby when transferring fluids.
- f: Depressurize all pressurized fluid systems (e.g., hydraulic systems or pressurized coolant systems) prior to beginning any repair work.

7. Leaking Vehicles

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system.

- a: Place drip pans under leaking vehicles and restrict use until vehicle is repaired.
- b: Designate parking spaces for all equipment so sources of leaking equipment can be determined.
- c: Promptly clean up any spilled fluids.
- d: Repair leaking equipment within 24 hours of leak detection (except when parts are not available).

8. Secondary Containment of Hazardous Materials

Applicable Rule: Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system. Secondary containment of waste fluids and proper storage of chemical supplies will help reduce the chance of discharges to the environment. State and Federal laws require secondary containment for storage of hazardous wastes, used oil, or hazardous materials stored in USTs, as well as the preparation of Spill Prevention Control and Countermeasure (SPCC) plans if (1) hazardous wastes are stored or (2) if oil is stored and any of the following three conditions are met: the underground buried storage capacity of the facility is greater than 42,000 gallons of oil; the storage capacity, which is not buried, is greater than 1,320 gallons of oil; or a single aboveground container has a capacity in excess of 660 gallons.

Secondary containment should be provided for used batteries. Used batteries should be placed in plastic containers until the batteries can be picked up by a battery service. New batteries should be stored in an earthquake-safe manner (i.e., stored away from the edge of shelves, use shelves equipped with restraining straps, etc.). New or used batteries should never be stored outside.

- a: Purchase appropriate secondary containment for the amount of waste or stock chemicals stored on site. Secondary containment equipment comes in many designs. An inexpensive system (used by the Port of Oakland) consists of a polyethylene tub capable of holding four 55-gallon barrels. The tub has a sliding cover to allow outdoor storage. Other systems consist of steel pallets with containment or even specialized storage sheds with containment floors, material dispensers, ventilation, lighting, ramps, and fire suppression equipment. When purchasing secondary containment, follow these rules:
 - The containment must hold 110% of the material in one container (if all are the same size), 150% of the volume of the largest container, or 10% of the total volume of all the containers within the containment.
 - Make sure that the material that the containment is made of is compatible with the stored wastes (e.g., acids, solvents etc.)
 - Allow for proper ventilation.

- b: An alternative to pre-fabricated containments is to construct a containment area using impermeable materials and berms (asphalt or concrete are acceptable if there are no cracks). The area and berms should be designed to hold 10% of the maximum amount of material that could be stored within the area. If this area is constructed outside, the containment area should have a roof to prevent the containment from filling with rain water.
- c: Any spills within the secondary containment should be cleaned up promptly. NOTE: OVERPACK DRUMS ARE NOT SECONDARY CONTAINMENT.
- 9. Vehicle Washing and Steam Cleaning

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle wash water is not to be discharged to the storm sewer system. Wash water may be discharged to the sanitary sewer under the conditions outlined below.

Compliance:

- a: Never discharge vehicle exterior, undercarriage, or engine wash water or steam cleaning residues to the storm sewer system.
- b: Where possible, construct a vehicle washing area that can recycle wash water or can discharge wash water to the sanitary system under approved conditions:
 - Use only biodegradable detergents.
 - Ensure that no storm water can enter the sanitary sewer drainage system.
 - Steam clean only if there is:
 - 1. A grease trap attached to the sanitary sewer drainage system, OR
 - 2. No solvents are used as part of the steam cleaning process.

In addition:

- 3. The discharge must be approved by EBMUD, OR
- 4. The discharge must drain into a holding tank and be disposed of as wastes instead of to the sanitary system.

- c: Contract with a vehicle washing service that can recycle wash water or will dispose of wash water in an approved manner.
- d: Rinsing of vehicle exteriors WITH WATER ONLY for appearances IS PERMITTED for discharge to storm sewers.
- e: NOTE: Steam-cleaning wastes, or rinse water using degreasers often have high levels of hydrocarbon residues and metals. Engine and undercarriage rinse water may be considered a hazardous waste. Testing of rinse water may be required by State and Local regulators.

10. Vehicle Fueling

Applicable Rule:

Protection of the Waters of the State

(Surface and Ground Water)

Vehicle fueling must be done in a manner to reduce spills and discharges to the storm and sanitary sewer systems.

- a: Operating instructions shall be posted at each fueling facility with emergency phone numbers.
- b: An attendant will always be present during any fueling or fuel transferring operations.
- c: Topping off is strictly prohibited.
- d: Fuel will not be stored in buckets, open drums, or any other open containers.
- e: Follow all procedures as outlined in the Underground Storage Tank Operating Permit Application and Monitoring, Spill Prevention and Emergency Response Plan. All Port of Oakland tenants with Port-owned tanks have a copy for their facility (See Appendix B).
- f: Spill cleanup equipment will be located near the fueling facility and be readily available to trained personnel (See Section 2).
- g: Only trained personnel shall operate mobile fueling facilities (tank trucks), and spill response equipment will be maintained on all mobile fueling sources.
- h: A low berm can be constructed around any storm drains within the watershed that drains the fueling area.

11. Maintaining Records

Applicable Rule:

Requirement Under General Industrial Storm Water NPDES Permit and the California Code of Regulations

Records of all employee training, storm sewer inspections, hazardous waste disposal, site spills, and storm sewer maintenance cleaning (yearly) must be kept on-site.

- a: Maintain records of all employee training including:
 - Hazardous Materials awareness training
 - Spill cleanup procedures
 - Storm water pollution education
- b: Maintain records of storm sewer inspections (see attached forms). Storm sewers should be visually inspected at least once per month for dry season discharges, oil sheen, or petroleum odors.
- c: Maintain records of the yearly storm sewer cleaning including:
 - 1. What material was removed (sediment, plastic, etc.).
 - 2. Was the material contaminated, and if so, what was the contaminant?
 - 3. What was the final disposition of any contaminated material?
- d: Maintain a record and disposal manifests for all hazardous waste disposal
- e: Maintain a record of all spills that occur outside. Small spills (a few gallons) or leaking vehicles do not need to be logged as long as they are promptly cleaned. Spill logs should include:
 - 1. What was spilled and approximately how much.
 - What was done to respond and who was notified.

PORT OF OAKLAND

INSPECTION REPORT VEHICLE SERVICE FACILITIES

Inspec	ted By:	Date:
	t Representative ture:	Title:
GENE	ERAL INFORMATION	
2.	FACILITY ADDRESS:	
3.	MAILING ADDRESS (IF DIFFERE	NT):
4.		
5.	PHONE NUMBER:	
6.	PRIMARY BUSINESS ACTIVITY:	
	SUBCATEGORIES: general repair: radiator repair: dip washing: engine cleaning: body repair:	fuel dispensing: exterior vehicle washing: machining: salvage/wrecking: painting:

SITE-SPECIFIC REQUIREMENTS FOR VEHICLE SERVICE FACILITIES

The following is a list of site-specific requirements as described on page 2 of the Port of Oakland Group Storm Water Pollution Prevention Program. Circle the appropriate response (Yes, No, N/A) and add comments as necessary.

	Yes	No	N/A	Does the facility have a Hazardous Materials Business Plan that includes a land hazardous materials and the approximate amounts used on-site?
2.	SITE	MA	P	
	Yes	No	N/A	Does the facility have a site map, including the following information:
	Yes	No	N/A	site boundaries:
	Yes	No	N/A	all buildings:
	Yes	No	N/A	all storm drains:
	Yes	No	N/A	all fueling facilities:
	Yes	No	N/A	all maintenance areas:
	Yes	No	N/A	all vehicle washing areas:
	Yes	No	N/A	all grease trap locations:
	Yes	No	N/A	any other pertinent information:
3.	SPII	LL PR	EVEN	TION CONTROL AND COUNTERMEASURE PLAN
3.			EVEN'	m -
	Yes	No	N/A	
	Yes	No CORE	N/A	If an SPCC plan is required, has one been prepared?

GENERIC REQUIREMENTS FOR VEHICLE SERVICE FACILITIES

The following are generic requirements as described on pages 5 through 15 of the Port of Oakland Group Storm Water Pollution Prevention Program for vehicle service facilities. Circle the appropriate response (yes, no, N/A) and add comments as necessary.

1.	STC	RM	DRAI	N PROTECTION (PAGES 5 AND 6)
	Yes Yes	No No	N/A N/A	Is there dry weather protection? Is the area around the storm drain free from evidence of recent spills or staining?
	Yes	No	N/A	Are all storm drains labeled?
			N/A	
2.	SPI	LL R	ESPON	NSE (PAGES 6 and 7)
	Yes	No	N/A	Is a spill response plan in place? If no, when?
			N/A	Have all reportable spilled quantities been properly documented (as per the spill response plan)?
	Yes	No	N/A	Are spills cleaned up immediately?
	Yes	No	N/A	Is proper spill response equipment present?
	Yes	No	N/A	Is spill response equipment easily accessible in work area?
3.			ARY SE N/A	WER PROTECTION (PAGES 7 and 8) Is there a preventive maintenance schedule for inspection, cleaning, and proper disposal of grease traps?
	Yes	No	N/A	
4			DRAII	NS (PAGES 8 and 9) Are all floor drains within the maintenance area(s) plugged?
	•		21/4	II
	Yes	No	N/A	Has a permit been obtained for any unplugged floor drains?
	Yes	No	N/A	Are proper floor cleaning methods as per the SWPPP used (i.e., swept then mopped)?

5.	PAR	RTS (CLEAN	VING (PAGE 9)
	Yes	No	N/A	Is a waste minimization program in place?
	Yes	No	N/A	Is a self-contained parts washer present? Describe
	Yes	No	N/A	Is the parts washer location acceptable?
6.	CHA	ANG	ING V	EHICLE FLUIDS (PAGE 10)
	Yes	No	N/A	Is fluid changing conducted inside? If no, where?
	Yes	No	N/A	Are drip pans used if outdoor fluid changes are required?
			N/A	Is the fluid transfer equipment designed to reduce the chance of spills during transfe to recycling or disposal containers?
	Yes	No	N/A	Are all pressurized fluid systems de-pressurized prior to beginning work?
7.	LEA	KIN	G VEI	HICLES (PAGES 10 and 11)
	Yes	No	N/A	Do leaking vehicles/equipment have drip pans?
	Yes	No	N/A	Have parking spaces been designated for all vehicles/equipment?
	Yes	No	N/A	Are leaking vehicles/equipment repaired within 24 hours?
8.			DARY N/A	CONTAINMENT OF HAZARDOUS MATERIALS (PAGES 11 and 12) Has a Spill Prevention Control and Countermeasures Plan been prepared for aboveground storage areas with a capacity of more than 660 gallons in a single container or 1,320 gallons in combined containers of fuels?
٠.	Yes	No	N/A	Is the secondary containment adequate to contain 110% of one container (if all containers are alike) or 150% of the volume of the largest container?
	Yes	No	N/A	Is the secondary containment material compatible with the stored wastes?
	Yes	No	N/A	Are only compatible materials stored together?
	Yes Yes	No No	N/A	Is the secondary containment in good condition?
	Yes	No	N/A	Does the secondary containment area have adequate ventilation?

9. VEHICLE WASHING AND STEAM CLEANING (PAGES 12 and 13)

Yes	No	N/A	Is vehicle washing done on-site?
Yes	No	N/A	Are only biodegradable soaps or water only used?
Yes	No	N/A	Is equipment/engine steam cleaning done on-site?
Yes	No	N/A	Is the wash area approved and permitted?
Yes	No	N/A	Does the wash area have an approved sump?
Yes	No	N/A	Is the wash area drain secure from the entry of storm water?
10. VE	HIC	LE FUI	ELING (PAGES 13 and 14)
Yes	No	N/A	Are proper operating instructions posted at the fueling facility?
Yes	No	N/A	Is an attendant always present during fueling activities?

Is spill cleanup equipment located next to the fueling area?_

Is fuel being stored properly (i.e., not in buckets, drums or open containers)?_____

For mobile fueling activities, are only trained personnel operating the refueling

11. MAINTAINING RECORDS (PAGES 14 and 15)

equipment?_

Yes No N/A

Yes No N/A

Yes No N/A

Yes	No	N/A	Have employee training records been maintained? including the following:
Yes	No	N/A	Hazardous materials awareness training?
Yes	No	N/A	Spill cleanup procedures?
Yes	No	N/A	Storm water pollution prevention education?
Yes	No	N/A	Have records of storm drain inspections been maintained?
Yes	No	N/A	Have records of yearly storm drain clean-out been maintained? including the
			following:
Yes	No	N/A	Wastes removed?
Yes	No	N/A	If the waste was contaminated, was the waste disposed of properly?
	No	N/A	Have all hazardous waste manifests been retained?
Yes	No	N/A	Have all spills been recorded (including the following information?):
Yes	No	N/A	Material spilled and how much?
Yes	No	N/A	What was done to respond and who was notified?

ADDITIONAL COMMENTS:	
	•
<u> </u>	en e

PORT OF OAKLAND INSPECTION REPORT (OPTIONAL*)

CLEANING ACTIVITIES	S				
		Type of cleaning material used	Waste Handling	Sewer Use	
Activity	Number	(e.g., water, steam, solvent, heat,	(e.g., sanitary sewer, shipped for	Permit?	Comments
		dry abrasives, alkali cleaner, etc.)	disposal, recycled, on-site reuse, etc.)	Yes / No / NA	
I. Parts Cleaning	Units				
a. Sink(s) (e.g., solvent)					
b. Spray cans					
c. Hot tank(s)					
d. Steam cleaner(s)					
e. Jet sprayer(s)					
f. Mechanical cleaning					
g. other					
h. other					
i. other					
II. Engine/Undercarriage	#/day				
a. Engines					
b. Undercarriages					
III. Vehicle Washing	Veh/day				

^{*} Optional information sheet to be used at the discretion of the Port auditing personnel

PORT OF OAKLAND INSPECTION REPORT (OPTIONAL*)

OTHER ACTIVITIES			·	
	Activity	Waste Handling	Sewer Use	
Activity	present	(e.g., sanitary sewer, shipped for disposal,	Permit?	Comments
		recycled, on-site reuse, treatment, etc.)	Yes / No / NA	
I. Fluid removal/replacement				
a. Radiator fluid				
b. Motor oil				
c. Transmission fluid				
d. Hydraulic fluid				
e. Differential lubricant				
f. Refrigerant				
II. Radiator Repair				
a. Boil out tank			:	
b. Flush booth waste				
c. Test tank waste				
d . Other				
III. Battery Replacement				
IV. Body shop waste				
a. Thinner/Paint				
b. Other				
c. Other				
V. Machining				
VI. Wrecking/Salvaging				
VII. Other				

^{*} Optional information sheet to be used at the discretion of the Port auditing personnel

Appendix B

Tenants in the Port of Oakland

Marine Terminals Sub-Group

Tenants in the Port of Oakland Marine Terminals Sub-Group

Note: SIC Codes, Industrial Activities, and designated responsible parties for these facilities were provided with letters to the Port confirming intent to participate in the Group Storm Water Pollution Prevention Plan.

American President Lines

1395 Middle Harbor Road

Oakland, CA 94607 Mark Yamamoto (510) 272-3921 SIC Code 4412

Vehicle Maintenance and Storage

Berkeley/Oakland Ready Mix Company

491 Embarcadero

Oakland, CA 94606 Robert Branstad

Manager (510) 526-1611

SIC Code 3273

Manufacturing

Vehicle Maintenance

International Transportation Services, Inc.

TransBay Container Terminal, Inc.

707 Ferry Street Oakland, CA Bill Walker

Supervisor, Safety & Loss Control

(510) 839-8228

SIC Codes 3799, 4491

Vehicle Maintenance

Keep on Trucking

370 8th Avenue Oakland, CA

Richard Padovani Terminal Manager (510) 893-6011 SIC Code 4214

Vehicle Maintenance Material Handling

Maersk Line Terminal

909 & 700 Ferry Street

Oakland, CA Nick J. La Rocco

Marine Operations Superintendent

(510) 835-7500

SIC Codes 4412, 4424, 4491

Material Handling

Marine Terminals Corporation

Seventh Street Public Container Terminal

90 Seventh Street

Oakland, CA

Bruce Elerick, R.E.A.

Manager, Safety & Security

(510) 645-1458

Matson Terminals, Inc.SIC Code 4463

Oakland Terminal

3050 Seventh Street

Oakland, CA

G. N. Garvey

F&M Manager

(510) 271-9826

Military Traffic Management

Command Western Area

Oakland Army Base

Oakland, CA

Glenna M. Eiermann

Environmental Engineer

(510) 466-2293

Sea Land Services, Inc. SIC Codes 4412, 4424

1425 Maritime Street

Oakland, CA

Shirley Kennedy

Loss Prevention & Safety Supervisor

(510) 271-1294

Stevedoring Services of America

Howard Container Terminal

1 Market Street

Oakland, CA

Sandi Lira

(510) 238-4400

SIC Code 4491

Vehicle Maintenance, Stevedoring

Material Storage and Handling

Vehicle Maintenance

SIC Codes 4491, 4731, 4783

Material Storage and Handling

Vehicle Maintenance and Storage

Vehicle Maintenance Material Handling

SIC Code 4190

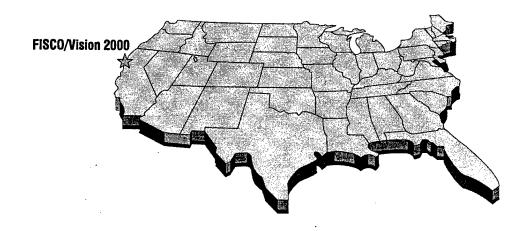
Vehicle Maintenance

Stevedoring Services of America Berth 23 1195 Maritime Street Oakland, CA 94607 Jacques Lira Terminal Manager (510) 419-1800

SIC Code 4190 Vehicle Maintenance

Trans Pacific Container Service Corporation 5100 Seventh Street Oakland, CA Terry W. Murphey Maintenance & Repair Manager (510) 834-0680

SIC Codes 4412, 4424 Material Handling and Storage Vehicle Maintenance and Storage This page left intentionally blank.



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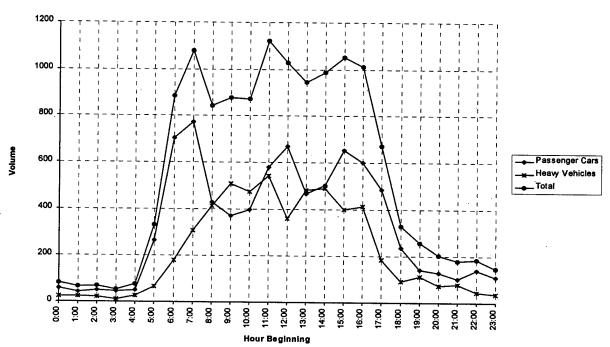
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Appendix J.1 Existing Traffic Data

Figure J.1-1

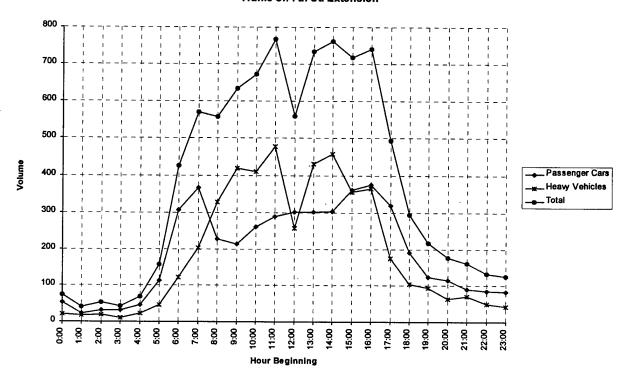
Traffic on Middle Harbor Rd. South of 3rd Street



Traffic counts collected on June 6, 1996, by Wiltec.

Figure J.1-2

Traffic on 7th St. Extension



Traffic counts collected on June 6, 1996, by Wiltec.

FISCO/Port Vision 2000 EIS/EIR Employment for Lease Areas 4 & 5

Table J.1-1

	Total I	ISCO	Percent in	FISCO Em	ployment in
Tennant	Emplo	yment	Lease		4 & 5
	1990	1996	Areas 4 & 5	1990	1996
AFGE	2	1	100%	. 2	1
Coast Guard	1	1	100%	1	1
Combat Log Gru 1	96	41	100%	96	41
DDOC	571	4	90%	514	4
DECA	62	4	100%	62	4
DFAS	0	183	100%	• о	183
DISA	0	7	100%	0	7
DPSDO	38	21	100%	38	21
FAADCPAC	4	1	100%	4	1
Federal Credit Union	10	6	100%	10	6
FISC	780	290	100%	780	290
ISSOT	10	8	40%	4	3
JMSDF	1	1	100%	1	1
MSCPAC	455	442	95%	432	420
NAVMTO	6	0	100%	6	o
NAVSEA	2	0	0%	0	0
Navy Audit	1	0	100%	1	. 0
Navy Exchange	5	3	100%	5	3
NCIS	9	o	100%	9	О
NEX Fit Asst Team	0	0	0%	0	0
NRPEO	42	54	100%	42	54
NTCC	37	20	100%	37	20
Post Office	1	1	100%	1	1.
PWCSFB	976	290	90%	878	261
ROICC	0	16	100%	0	16
VOA	156	73	50%	78	37
USNS A.J. Higgins*	117	58	100%	117	58
USNS Kawishiwi*	127	63	100%	127	63
USNS Mercy*	106	52	100%	106	52
USNS Observation*	60	30	100%	60	30
USS Kansas City*	479	236	100%	479	236
USS Wichita*	479	236	100%	479	236
USS class*	479	236	100%	479	236
USS class*	479	236	100%	479	236
TOTAL	5,591	2,614		5,327	2,522

^{* 1996} employment per ship in port was based on average reductions for all ships served.

SOURCES: Personnel Data from Marty Wolf of Radian International, Sacramento, and Ed Guldner of FISCO on June 19, 1996.

Table J.1-2

FISCO/Port Vision 2000 EIS/EIR Trip Generation for FISCO

FISCO Access	Employees	Α	M Peak Ho	ur	P	M Peak Ho	ur
Location		ln	Out	Total	In	Out	Total
Maritime/7th Extension							
Non-Truck Traffic		522	111	633	117	319	436
Middle Harbor/Gate 2	·						
Total Traffic		414	128		261	449	
% Non-Trucks		87%	43%		23%	78%	
Non-Truck Traffic		360	55	415	60	350	410
Total Non-Truck Traffic		882	166	1,048	177	669	846
Employees							
FISCO							
Lease Areas 1, 2, & 3	92						
Lease Areas 4 & 5	<u>2,522</u>						
Total	2,614					:	
Port - Lease Areas 1-3	<u>500</u>						
Total Employees	3,114						
Trips per Employee		0.28	0.05	0.33	0.06	0.21	0.27
ITE Trip Generation Military Base (ITE 501)		_	_	0.39	_	_	0.39

Table J.1-3

FISCO/Port Vision 2000 EIS/EIR VEHICLE TYPES GATE 2 - FISCO ACCESS AT MIDDLE HARBOR ROAD

Hour			Inbound						Outboun	d		
Beginning		Single Unit	Single	Multi-	Total	Total	Cars,	Single Unit	Single	Multi-	Total	Total
II .	Pickups &	Trucks &	Trailer	Trailer	Heavy		Pickups &	Trucks &	Trailer	Trailer	Heavy	
	Motorcycles	Buses	Trucks	Trucks	Vehicles		Motorcycles	Buses	Trucks	Trucks	Vehicles	
7:00	309	35	11	1	47	356	44	34	23	1	58	102
8:00	182	40	43	l 0	83	265	56	88	34	1	123	
9:00	97	46	81	1	128	225	85			ا	161	246
10:00	121	57	70	2	.129				59	4	114	
16:00	39	70	63	1	134	173	270	28	47	0	75	345

Traffic counts collected on June 6, 1996, by Wiltec.

Table J.1-4

FISCO/Port Vision 2000 EIS/EIR VEHICLE PERCENTAGES GATE 2 - FISCO ACCESS AT MIDDLE HARBOR ROAD

Period		Inbo	ound				Outh	ound		
	Cars,	Single Unit	Single	Multi-	Total	Cars,	Single Unit	Single	Multi-	Total
	Pickups &	Trucks &	Trailer	Trailer	Heavy	Pickups &	Trucks &	Trailer	Trailer	Heavy
	Motorcycles	Buses	Trucks	Trucks	Vehicles	Motorcycles	Buses	Trucks	Trucks	Vehicles
07:00 - 08:00	87%	10%	3%	0%	13%	43%	33%	23%	1%	57%
08:00 - 09:00	69%	15%	16%	0%	31%	31%	49%	19%	1%	69%
09:00 - 10:00	43%	20%	36%	0%	57%	35%	44%	22%	0%	65%
10:00 - 11:00	48%	23%	28%	1%	52%	44%	25%	29%	2%	
16:00 - 17:00	23%	40%	36%	1%	77%	78%	8%	14%	0%	22%

Traffic counts collected on June 6, 1996, by Wiltec.

Table J.1-5 FISCO Employee Trip Distribution

Location	Residency	Con	Commute Mode	de	Auto	Auto Trips	Trips	Route	%	of Emplo	yees Se	rved by	% of Employees Served by Each Route	ute
		Solo	Carpool	Other	Factor	Number	%		1-80 E.	I-80 W.	Rt. 24	1-880	1-580 E.	Local
		1.00	0.47	0.00										
N. Alameda (Oakland)	313	74.6%	9.8%	12.4%	79.2%	248	34.1%							
S. Alameda (Hayward, Fremont	119	78.6%	14.3%	7.1%	85.3%	101	14.0%	I-580 E.					14.0%	
E. Alameda (Pleasanton, Livermore)	10	80.0%	20.0%	%0.0	89.3%	<u>ດ</u>	1.2%	1-580 E.					1.2%	
E. Contra Costa (I-680)	98	80.5%	15.9%	3.7%	87.9%	9/	10.4%	Rt. 24			10.4%			
W. Contra Costa (Richmond, I-80)	107	79.2%	17.0%	3.8%	87.1%	93	12.8%	1-80 E.	12.8%					
Santa Clara County	15	73.3%	26.7%	%0.0	82.8%	13	1.8%	I-880				1.8%		*
San Francisco, San Mateo Counties	58	76.8%	7.1%	16.1%	80.1%	46	6.4%	I-80 W.		6.4%				
Marin and Sonoma Counties	14	100.0%	0.0%	%0.0	100.0%	4	1.9%	1-80 E.	1.9%					
Solano, Napa, Yolo, Sacto Counties	136	64.9%	33.6%	0.7%	80.6%	110	15.1%	I-80 E.	15.1%					
San Joaquin Valley & Outlying	17	87.5%	12.5%	0.0%	93.3%	16	2.2%	I-580 E.					2.2%	
Total	875					726	100.0%							
Oakland Details (from Truck Survey)														
Civic Center	11						1.2%	088-I				1.2%		
Dimond	15						1.7%	1-580 E.					1.7%	
Elmwood	72						8.1%	-880 -880				8.1%		
Fruitvale	69						7.7%	-880 -880				7.7%		
Grand Lake	က						0.3%	Local						0.3%
Laurel	4						0.4%	Local						0.4%
Mills College	7						0.5%	Local						0.2%
North Oakland	17						1.9%	Local						1.9%
San Antonio	71			•			7.9%	Local						7.9%
West Oakland	41						4.6%	Local						4.6%
Subtotal %	305						34.1%							
Total %									30%	%9	10%	19%	19%	15%
<u> </u>											1			

SOURCES: Fleet & Industrial Supply Center (158-1) employee Transportation Servey Results (BAAQMD, 1994) Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, 1993).

Table J.1-6
Port of Oakland Employee Trip Distribution

Location	Resid		Route	% (of Emplo	yees Se	rved by	Each Ro	ute
	Number	%		I-80 E.	I-80 W.	Rt. 24	I-880	I-580 E.	Local
Oakland (see details below)	369	27.4%							<u> </u>
Alameda	24	1.8%	Local						1.8%
Berkeley/Albany/Emeryville	22	1.6%	I-80 E.	1.6%					
San Leandro/San Lorenzo	89	6.6%	I-880				6.6%		
Piedmont	1	0.1%	I-580 E.				3.3.0	0.1%	
Hayward/Castro Valley	116	8.6%	I-580 E.					8.6%	
Fremont/Newark	38	2.8%	1-880				2.8%	0,070	
Union City	23	1.7%	I-880				1.7%		
Dublin/Livermore/Pleasanton	13	1.0%	I-580 E.					1.0%	
San Pablo/Pinole/Rodeo	43	3.2%	I-80 E.	3.2%					
Richmond	45	3.3%	I-80 E.	3.3%					
El Cerrito	5	0.4%		0.4%					
Pittsburg/Antioch	28	2.1%		0, 1,0		2.1%			
Martinez/Concord	28	2.1%				2.1%			
Walnut Creek/Orinda/Lafayette	8	0.6%				0.6%			
Alamo/Danville/San Ramon	5	0.4%				0.4%			
San Francisco	111	8.3%			8.3%	0.170			
San Francisco Longshore *	112		I-80 W.		8.3%				
San Mateo County	80		I-80 W.		5.9%			,	
Santa Clara County	67	5.0%	I-880				5.0%		
Marin County	15	1.1%	1-80 E.	1.1%	i				
Napa/Sonoma Counties	20	1.5%	I-80 E.	1.5%					
Solano County	83	6.2%	I-80 E.	6.2%		l			
Total	1345	100.0%							
Oakland Details								•	İ
Civic Center	11	1.0%	I-880				1.0%		
Dimond	15		I-580 E.]		1.3%	
Elmwood	72	6.5%	1-880			- 1	6.5%		
Fruitvale	69	6.2%	I-880				6.2%	ŀ	
Grand Lake	3	0.3%	Local	ŀ			ŀ		0.3%
Laurel	4	0.4%	Local	İ		1		ł	0.4%
Mills College	2	0.2%	Local		l			. [0.2%
North Oakland	17	1.5%	Local	l	ľ		ì	ľ	1.5%
San Antonio	71	6.4%	Local		į				6.4%
West Oakland	41	3.7%	Local			l			3.7%
Subtotal %	305	27.4%							
T-4-10/		1 - 100 - 100 -							
Total %				17%	23%	5%	30%	11%	14%

^{*} Added to show the effects of longshore workers who must report to the union hall in San Francisco before going to the Port. (Half of longshore workers typically report to San Francisco).

SOURCES:

- 1. Truck Survey Marine Terminals and Railroad Intermodal Yards (Port of Oakland, 1993).
- 2. Port of Oakland Maritime Economic Impact Study (1990).
- 3. Meeting on June 14, 1996: Anne Whittington, Senior Port Strategic Planner (Economics), David Adams, Port Chief Warfinger, and Mark Bowman, Dowling Associates.

Table J.1-7 Truck Trips

Location	Resid	lency	Inbo	und	Outbo	ound	Route
	Number	%	Number	%	Number	%	1.52.15
Oakland (see details below)	369	22.1%	489	32.4%	403	29.0%	
Alameda	24	1.4%	5	0.3%	6	0.4%	Local
Berkeley/Albany/Emeryville	22	1.3%	7	0.5%	8	0.6%	I-80 E.
Lan Leandro/San Lorenzo	89	5.3%	55	3.6%	48	3.5%	1-880 S.
Piedmont	1	0.1%		0.0%		0.0%	Local
Hayward/Castro Valley	116	6.9%	52	3.5%	43	3.1%	1-880/238
Fremont/Newark	38	2.3%	22	1.5%	13	0.9%	I-880 S.
Union City	23	1.4%	18	1.2%	25	1.8%	I-880 S.
Dublin/Livermore/Pleasanton	13	0.8%	2	0.1%	3	0.2%	1-880/238
San Pablo/Pinole/Rodeo	43	2.6%	14	0.9%	3	0.2%	1-80 E.
Richmond	45	2.7%	117	7.8%	92	6.6%	I-80 E.
El Cerrito	5	0.3%	-	0.0%		0.0%	I-80 E.
Pittsburg/Antioch	28	1.7%	7	0.5%	12	0.9%	Rt. 24
Martinez/Concord	28	1.7%	12	0.8%	8	0.6%	Rt. 24
Walnut Creek/Orinda/Lafayette	8	0.5%		0.0%		0.0%	Rt. 24
Alamo/Danville/San Ramon	5	0.3%	4	0.3%	. 1	0.1%	Rt. 24
San Francisco	111	6.6%	89	5.9%	76	5.5%	1-80 W.
San Mateo County	80	4.8%	36	2.4%	21	1.5%	I-80 W.
Santa Clara County	67	4.0%	80	5.3%	56	4.0%	I-880 S.
Marin County	15	0.9%	4	0.3%	4	0.3%	I-80 E.
Napa/Sonoma Counties	20	1.2%	14	0.9%	20	1.4%	I-80 E.
Solano County	83	5.0%	38	2.5%	23	1.7%	I-80 E.
Sacramento Area		0.0%	100	6.6%	65	4.7%	
San Joaquin/Stanislaus		0.0%	127	8.4%	100		1-880/238
Fresno/Merced/Madera		0.0%	88	5.8%	76		1-880/238
Kern/Kings/Tulare		0.0%	12	0.8%	8		1-880/238
Santa Cruz County		0.0%	2	0.1%	5	0.4%	I-880 S.
Other California	375	22.4%	56	3.7%	49	3.5%	
Other States	59	3.5%	53	3.5%	48	3.5%	
Unknown	4	0.2%	4	0.3%	174	12.5%	
Total	1671	100.0%	1507	100.0%	1390	100.0%	
Oakland Details							
Civic Center	11	0.8%	18	1.2%	15	1.0%	1-880
Dimond	15	1.1%	24	1.6%	20	1.4%	I-880
Elmwood	72	5.2%	115	7.7%	95	6.8%	I-880
Fruitvale	69	5.0%	111	7.3%	91	6.6%	
Grand Lake	3	0.2%	5	0.3%	4	0.3%	Local
Laurel	4	0.3%	6	0.4%	5	0.4%	Local
Mills College	2	0.1%	3	0.2%	3	0.2%	Local
North Oakland	17	1.2%	27	1.8%	22	1.6%	Local
San Antonio	71	5.1%	114	7.6%	94	6.7%	Local
West Oakland	41	3.0%	66	4.4%	54	3.9%	Local
Subtotal	305	22.1%	489	32.4%	403	29.0%	

SOURCE: Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, March/April 1993)

Table J.1-8
Truck Routes

Location			Inb	ound 1	rips					Oir	tbound	Trins		
	1-80 E.	I-80 W.	Rt. 24	1-880	1-880/238	1-880 S.	Local	I-80 E.	1-80 W.	Rt. 24	1-880	1-880/238	I-880 S	Loca
Oakland (see details below)									1			1.000/200	7 000 0.	Loca
Alameda						į	l 5	1			1			6
Berkeley/Albany/Emeryville	7							8						۱ ،
Lan Leandro/San Lorenzo						55		_				·	48	
Piedmont							l o				i		70	ا ا
Hayward/Castro Valley					52			:			l i	43		ľ
Fremont/Newark						22						, ,	13	ĺ
Union City	1 1					18					i		25	l
Dublin/Livermore/Pleasanton					2						ŀ	3		
San Pablo/Pinole/Rodeo	14							3			j l			Ĭ
Richmond	117						1	92			1			
El Cerrito	0							0						
Pittsburg/Antioch			7							12				
Martinez/Concord			12							8				
Walnut Creek/Orinda/Lafayette			0	J						0				
Alamo/Danville/San Ramon			4		,					1:				
San Francisco		89				1			76					
San Mateo County		36	i	ı	i				21					
Santa Clara County						80							56	
Marin County	4							4						
Napa/Sonoma Counties	14	1	1					20				1	i	
Solano County	38		Į.	- 1				23						
Sacramento Area	100			Ò			ĺ	65						
San Joaquin/Stanislaus					127		l					100	1	
Fresno/Merced/Madera					88							76		
Kern/Kings/Tulare	· .				12					i		8	- 1	ĺ
Santa Cruz County						2			l			ı	5	
Other California	i		i						1					
Other States			l						Į.				- 1	
Unknown				1		l			l					
Oakland Details														
Civic Center		T		18	T				T		15	T		
Dimond		ł	į	24	Ì					ŀ	20			ļ
Elmwood	-	l		115	ļ						95	- !		
Fruitvale		j	j	111	ļ	- 1	- 1				91		Í	
Grand Lake	l	- 1	- 1			l	5			l				4
Laurel		- 1				I	6			J	- [ŀ	5
Mills College		ŀ	j	i			3	- 1	1	i		į	- 1	3
North Oakland		-]			ĺ	27	- 1	ļ	l		1	- 1	22 94
San Antonio		į			1	ļ	114		j	ŀ			l	
West Oakland				1.			66							54
Total Inbound/Outbound Trips	294	125	23	268	281	177	226	215	97	21	221	230	147	188
% of Total I/O Trips	21%	9%	2%	19%	20%	13%	16%	19%	9%	2%	20%	21%	13%	17%
							1							
P4 of Total Tring (In 8 Out)					1		ļ				Т	1		
% of Total Trips (In & Out)								20%	9%	2%	19%	20%	13%	17%

SOURCE: Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, March/April 1993)

EXIST-AM.CMD	Fri Nov'l, 1996 15:46:20	96 15:4	6:20			Page 1-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland
	FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour	n 2000 l Condition	EIS/EIR ns	! ! !		1 1 1 1 1 1 1	
	Trip Generation Report	ion Repo	ort	! ! !		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Forecast for AM Peak Hour	AM Peak	Hour				
Zone # Subzone	Amount Units	Rate In	Rate	Trips Trips In Out	rips T it T	Total \$ Of Trips Total	
		1 1			1	!	
1 FISCO Areas Zone 1	1 FISCO Areas 2805.00 Employees '90 0.28 0.05 Zone 1 Subtotal	0.28	0.05	785 785	140 140	925 100.0 925 100.0	
TOTAL	TOTAL			785	140	925 100.0	

Assoc., Oakland					
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Page 2-1		1			
EXIST-AM.CMD Fri Nov 1, 1996 15:46:20	FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour	Trip Distribution Report	Percent Of Trips Existing	To Gates 11 12 13 14 15 16	30.0 7.0 10.0 19.0 19.0 15.0
EXIST-AM.CMD		t		11 12 Zone	1 30.0 7.(

Fri Nov 1, 1996 15:46:20

EXIST-AM.CMD

Page 3-1

FISCO/Port Vision 2000 BIS/BIR Existing Conditions AM Peak Hour

Turning Movement Report
AM Peak Hour

Westbound Total Left Thru Right Volume		1195	25	1247		1700	342	2042		1195	342	1537		1020	342	1362		1178	342	1520		1034	0	1034		1281	583	1864		939	583	1522
nd Right		S	0	Ŋ		0	0	0		0	0	0		87	0	87		0	0	0		372	0	372		0	0	0		99	0	26
Westbound t Thru Rig		490	0	490		0	0	0		0	0	0		0	o	0		0	0	0		199	0	199		555	0	522		59	0	59
We Left		425	0	425		0	0	0		0	0	0		22	0	22		0	0	0		87	0	87		365	495	860		322	0	322
Eastbound Left Thru Right		0	0	0		615	290	905		ß	0	ß		11	0	11		41	0	41		н	0	7		49	0	49		29	0	53
Eastbound t Thru Ri		0	0	0		300	0	300		0	0	0		0	0	0		0	0	0		16	0	16		184	0	184		9	0	9
Ba Left		0	0	0		ĸ	0	ū		20		20		. 15	0	15		70	52	122		13	0	13		0	0	0		α	0	Φ
und Right	ı	ស	0	2		0	0	0		200	0	200		14	0	14		338	290	628		4	0	4	tion	0	0	0		56	0	26
Southbound Left Thru Right	Ramps	S	0	ß	Ramps	425	0	425		625	290	915		463	290	753	Extension	205	0	205		95	0	92	Connection		0	0		308	495	803
Screft	3	0	0	0	nd EB		0	Ŋ	St.	0	0	0	.;	103	0	103			0	0	Extension	129	0	129	ite 2	0	0	0		56	0	56
ınd Vight	W. Grand	0	0	0	W. Grand		0	90	Burma	0	0	0	14th St	39	0	39	7th St		0	0		18	0	18	.d./ G	73	88	161	d St.	31	53	84
Northbound Left Thru Right		ιΩ	0	ß	St. / 1		52	312	St./ 1	340	52	392	St./ 1	238	52	290	/ ±0		0	340	7th St.	62	0	62	rbor F	0	0	0	St./ 3rd	9	35	92
No Left		260	25	312			0	0			0	Ŋ		28	0	28			0	184	St./	38	0	38	lle Ha	55	0	55	ine S	80	0	80
Volume Type	#1 Maritime	Base	Added	Total	#2 Maritime	Base	Added	Total	#3 Maritime	Base	Added	Total	#4 Maritime	Base	Added	Total	#S Maritime	Base	Added	Total	#6 7th	Base	Added	Total	#7 Middle Harbor Rd./ Gate	Base	Added	Total	#8 Adeline	Base	Added	Total

EXIST-AM.CMD	0	Fri Nov 1, 19	1996 15:46:20	46:20			Page !	5-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland
1 1 1 1 1 1 1 1 1	SILA	FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour	on 2000 Conditi	EIS/EIR	: : : : : :		; ; ; ;	; ; ;	
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ ************************************	Of Service Computation Report ions Method (Future Volume Alt. ************************************	Computa Future	tion Repo	rt 1ternat ******	ive)	*	1 4 1 4 1 4 1 4	
<pre>'**************** Cycle (sec): Loss Time (sec): Optimal Cycle:</pre>	######################################	**************************************	ritica ritica verage evel O		p. (X): ec/veh):	* * *	******** 0.536 10.4 B	* 9 4 6 6 4 * * * * * * * * * * * * * * * *	
********* Approach: Movement:	**************************************	*********** South Bound L - T -	****** ound - R	********* East Bound L - T -]	****** Bound - R	* 1	********* West Bound	***** und - R	
Control: Rights:	Protected Include	- Protected Include	ed de	 Protected Include	otected Include		Protected Include	ed	
••	1 0 1 0 0	0 0 0	0 1 0	° ° ° .	0000	o H	000	. 00	
- 무		-	-				:		
Growth Adj:	1.00 1.00 1.0	1.00 1.0	1.00	1.0	1.0	-	-	1.00	
Initial Bse: Added Vol:	260 52 0	. 0	v O		00	425	4, 0,0	v O	
PasserByVol:	312 5	00	o r	00	00	425	0 4	o w	
User Adj:	1.00 1.00	1.00	1.00				-	1.00	
PHF Adj: PHF Volume:	1.00 1.00 1.00 312 5 0	0 1.00 1.00	1.00	1.00 1.00	0 1.00	1.00	1.00	1.00	
Reduct Vol: Reduced Vol:	312 5	0 0	010	00	0 0	425	0 64	0 10	
PCE Adj:	1.00	1.00	1.00				П.	1.00	
.:	312 5		5.5	0 0 -	0	425	490	50.1	
Saturation Flow Module:	1 1 1	: : : : : : : : : : : : : : : : : : :			1 1 1 1	-	, 	-	
Sat/Lane:	1900 1900 1900	0 1900 1900	1900	1900 1900	1900		1900 1900	1900	
Lanes:	1.00	0.00	1.00	0.00 00.00			0.99	0.01	
Final Sat.:	1467 1545	0 0 1545	1313	0	0	1545	1529	16	
Capacity Ana	Capacity Analysis Module:		- 6		•	a c	3	- ;	
Crit Moves:	3							1	
Green/Cycle: Volume/Cap:		• • •	0.01	0.00 0.00		0.60	0.60	0.60	
Transfer of Correct	rico Modulo.					-			
Delay/Veh:	15.7 11.6 0.0		88.4	0.0 0.0		7.5	8.5	8.2	
User DelAdj: AdjDel/Veh:	15.7 11.6 0.0	0 1.00 1.00	1.00	0.0 0.0	0.0	7.5	1.00 8.2	1.00 8.2	
Quene:	7 0 7	0 0 0	0 * * * *	****	0 ***	7	8	0	

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		FISC	FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour	t Vision 200 sting Condit AM Peak Hour	on 2000 EI Conditions k Hour	EIS/1 ons	SIR				
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alte	1994 HCM O	Level (peratic	Level Of Service Operations Method	lce Co	Computation Report (Future Volume Alt	tion F Volum	Report	Computation Report (Future Volume Alternative)	*	*	*
Intersection #2 Maritime St./ W. Grand EB Ramps	#2 Mariti	me St./	W. Gre	and EE	Grand EB Ramps	* * * * * * * * * * * * * * * * * * *	***	***	****	****	***
Cycle (sec):	10	0		ប	Critical		Vol./Cap.	:: (x)		0.964	
		0 (Y+R	= 4 SE	sec) Av	Average Delay (sec/veh)	Delay	zes) /	/veh):		25.1	_
Optimal Cycle:	e: 180	0	Level Of Service:	j	Level Of	f Serv	Service:	***************************************	, , , , , , , , ,	Δ :	_
Approach:		punc	Sout	South Bound	ınd	Ea	East Bound	und	Wes	******** West Bound	r*** Ind
Movement:		ρς; '	п -	E+	ρ: -	ا با	E	_ ≃ '	ا ا	F	er
Control:	Protected	red	Pro	Protected	ָּבֶּי בְּי		Protected	ed	Pro	Protected	- - -
Rights:	Include		г	Include	Je		Include	de	H	Includ	. 9
Min. Green: Lanes:	0 0	° -	0 -	۰ ,	ه ه د	٥ ,	۰,	۰ ,	0 0	0	۰ ،
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	; ; ;	-	:	-	:		. !	- :	- 1		
Volume Module Base Vol:	e: 0 260	- 06	-	425	- 0	_	300	615	0	c	- 0
Growth Adi:	-	H		1.00	1.00		1.00	1.00	1.00	00	1 00
Initial Bse:	0		Ŋ	425	0	L.	300	615	0		
Added Vol:	0 52	0	0	0	0	0	0	290	0	0	0
PasserByVol:		0		0	0	0	0	0	0	0	0
				425	0		300	905	0	0	0
User Adj:	Н	٦		1.00	1.00		1.00	1.00	1.00 1	1.00	1.00
PHF Adj:	-	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
FAR VOlume:	7	90	u (425	0	S.	300	905		0	0
Reduct Vol:	7	2 6	э .	י	0 0	ο ι	0 0	0 1	0 (0 (۰ ،
Reduced vol:	•	2 6	u S	274	o ;	n e	300	905			٥ ;
MIF AG:			3 6	20.1	00.1	3 8	90.1	20.1		3.6	90.
Final Vol.:	4		1 50.1	425	0	5.00	300	905	7.00.7	3.0	00.4
					-	-				, !	
Saturation F	Flow Module		-		-	_		-	-		-
Sat/Lane:	1900 1900	1900	1900 1	1900	1900	1900	1900	1900	1900 1	1900	1900
Adjustment:	1.00 0.79		0.77 0	0.81	1.00	69.0	0.81	0.69	1.001	1.00	1.00
Lanes:	0.00 1.55		1.00 1	1.00	0.00		1.00	1.00			0.00
Final Sat.:	0 2322	675	1467 1	1545	0	1313	1545	1313		0	0
					-		1				
Capacity Analysis Module	Lysis Modul	: : :	;	į	;			;			
Vol/Sat:	0.00 0.14	0.14	0.00	. 28	0.00	0.00	0.19	0.69	0.00	0.00	0.00
Crit Moves:		;		* *				* * *			
Green/Cycle:	00.	0.28	.01	0.29	0.00		0.71	0.71		0.00	0.00
Volume/Cap:	0.00 0.51	0.51	.51	96.0	00.00	. 01	0.27	96.0	0.00	0.00	00.0
Toylor Of Con	rice Module	-	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	-		!				!	
	Service module			t	0		•	;			,
tay/ven:	0.02.0.0	20.0	55.7		0.0	5.6	m.	24.1			0.0
user DelAdj:	1.00 1.00	1.00			1.00		1.00	1.00			1.00
AdjDel/Veh:	0.0 20.0	20.0	55.7 4	47.7	c	3	~				•
					:		•	1.17	0.0	٥.	0.0

Page 7-1

Fri Nov 1, 1996 15:46:20
FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
AM Peak Hour

EXIST-AM.CMD

	1			;	1						!		
<pre>Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************</pre>	1994 HCM	HCM OF	Level Of Service Operations Method	Of Ser	Service C Method (Computation Report (Future Volume Alternative)	tion : Volum	Report	ernati ****	*	*****	* * * *	
Intersection #3 Maritime St./ Burma St. ***********************************	#3 W	faritin	ne St./	/ Burma	a St.	*************	***	***	***	* * *	* * * *	******	
Cycle (sec):	· (100	9	•	0 6	Critical	l Vol.	Vol./Cap.	(x):		0.414	4.0	
Optimal Cycle:		39	0 (I+R	, 3	Beck A	Average Detay (sec/ven) Level Of Service:	of Serv	Service:	- 1	;	ν « t	ν α	
Approach: Movement:	No L	North Bound	×	k k	South Bound	South Bound East Bound L - T - R L - T - R	### EB	East Bound	und - R		West Bound	und - R	
Control:	<u>L</u>	Protected	red ced		Protected	 ed	Pr	Protected	_ 	<u> </u>	Protected		
Argues: Min. Green: Lanes:	0 -1 -	0	, 0 10 0 1	о -	111C1U	1 0 .	0 1 .	0	1 0		0 0 0		
dul	:- e:	:	-	<u>:</u>	! ! !	-	<u> </u>	!		-	 	:	
Base Vol:					,	200							
Growth Adj: Initial Bse:	1.00	340	1.00	1.00	1.00	200	1.00	0.00	1.00 5	1.00	1.00	1.00	
Added Vol:	0		0	0	290	0	0	• •	0		0		
PasserByVol:	0		0	0	0	ο.	0	0	0	0	0	0	
Initial Fut:	5 6	392		0 6	915	500	5 50	0 5	n S		0 5	0 6	
PHF Adi:	1.00		٠,	1.00	4 ~	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:			•	0		200	20	0	5			0	
Reduct Vol:	0		0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	വ			0	915	200	20	0	ហ	0		0	
	1.00			1.00	н.	1.00		1.00	1.00	1.00	н.	1.00	
MLF Adj: Final Vol.:	J . C	411	. o	7.00 0	961	210	1.00 20	0.1	7.00 2	3.0	00.1	7.00	
		- ;	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-		-		,	· -	·	1	,	
g	low M		-	_		-	_		-	_		-	
Sat/Lane:	1900		1900	1900		1900		1900	1900	1900		1900	
Lanes:	1.00	2.00	00.0	1.00	1.64	0.46	1.00	00.0	00.0	00.0	00.0	90.0	
Final Sat.:	1444		0	1900		529	1444	0	1292	0	,	0	
	.	•		-		-	-		-	-	1		
Capacity Analysis Vol/Sat: 0.00	17818 0 00	Module:	.e:	0.00	0.40	0.40	0.01	00	00.00	00	00	0	
Crit Moves:	*)) ,	* *	;	* * *		•	.			
Green/Cycle:	0.01		0.00	00.0		96.0		00.0	0.03	0.00		0.00	
e/Ca	0.41	0.14	00.00	0.00	0.41	0.41	-	0.00	0.12	0.00	0.00	0.00	
Level Of Service Module	 /ice	Module		<u>:</u>	!	-	!	; ; ; ; ;	-	<u>:</u>	1	-	
Delay/Veh:	42.5	0.0		0.0		0.2		0.0	30.3	0.0	0.0	0.0	
User DelAdj:	1.00	i,	1.00	1.00	Н	1.00		1.00	1.00		Н	1.00	
AdjDei/Ven:	42.5	0.0	0.0	0.0	0.7	0	33.8	0.0	30.3	0.0	0.0	0.0	
Queue:	o ;	4	3	> }	N	3	٦ :	0	0	> {	0	0	

		77614	/Fort Visi Existing AM Pe	t Vision 200 sting Condit AM Peak Hour	on zooo El Conditions k Hour	FISCO/FORT VISION 2000 EIS/EIR Existing Conditions AM Peak Hour	Ä,				
0.00 T	1994 HCM O	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative)	Of Service ons Method	ice C hod (omputa Future	Computation Report (Future Volume Alternative)	 eport (e Alt	ernati	Ve)		. *
Intersection #4 Maritime St./ 14th St.	#4 Maritime	me St./ ******	14th	St.	* * * * * *	* * * *	*	* * * * *	****	****	**
Cycle (sec):	100	0		υ	Critical	l Vol.	Vol./Cap.	\sim		0.352	
Loss Time (sec)	: (0 (Y+R	= 4 S	sec) A	verage			(sec/veh):		7.7	
Operman Cycre: *********	****	<i>4</i> ******	****] * * *	**************************************	OI GELVICE:	Service: ******	****	*****	T ******	***
Approach:	7.	puno	Sou	South Bound	nnd		East Bound			West Bound	ınd
Movement:	- 1	۲ ا	י ו	H	2	ָר. ב	E+	e4	.a	ı E⊣	~
Control:	Protected	ted	Pr	Protected	ed -	<u>д</u>	Permitted	ted	Pe	Permitted	ed
Rights: Min Green:	Include	nde	c	Include	မွ	c	Include	de	Α̈́ c	Include	e e
	0	0	0 1	· н	о п	, 0	- =	° •	, o	٥,	0
Lubom emurlot		-	<u> </u>	1						-	
	28 238	3.9	103	463	14	<u>ا</u>	c	-	22	-	87
Growth Adj:	Н	1.0		1.00	1.00	0	1.00	1.00	7	° 6.	1.00
Initial Bse:	28			463	14	15	٥	11	22	0	87
Added Vol:	Ŋ		0	290	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0
Initial Fut:	2 8	66		753	14	15	0 5	11.	55	0 8	87
USEL AGJ: PHF AGi.	1 00 1 00		3 6	00.1	0.1		00.1	00.1	1 00 1	3 8	9 6
PHF Volume:	28			753	14	15.	0	11	+	30	87
Reduct Vol:	0		0	0	0	0	0	0	0	0	٥
Reduced Vol:	28 290			753	14	12	0	11		0	87
PCE Adj:				1.00	1.00	00.	1.00	1.00	Н	00.	1.00
MLF Adj:	-	-i		1.05	1.05		1.00	1.00	-	۰.	1.00
Final Vol.:	28 304	4	103	791	15	12	0	11	75	0	87
Saturation Fl	low Module:			1		-	; ; ;	- ! ! !		; ; ;	-
	1900 1900	1900	1900	1900	1900	1900	1900	1900	1900 1	1900	1900
Adjustment:	0.76 0.78	0.78	0.76	0.80	0.80	0.58	1.00	0.58		1.00	0.68
Lanes:			1.00	1.96	0.04	0.58	00.0	0.42		00.	1.00
Final Sat.:	1444 2625	354	1444	2983	57	641	0	470	1414	0	1292
	Lusis Modul	 	-	-		!	1 1 1 1 1 1	-			
Vol/Sat:	0.02	0.12	0.07	0.27	0.27	0.02	00.00	0.02	0.02.0	00.00	0.07
Crit Moves:				* * *	i i		,				*
Green/Cycle:	0.06 0.50	0.50	0.31	0.75	0.75	0.19	00.0	0.19	0.19 0	00.0	0.19
Volume/Cap:			.23	0.35	0.35		00.0	0.12		00.0	0.35
Tayel Of Ser	Service Module		!			-		-	-	-	1
	30.5 9.1	9.1	16.7	2.7	2.7	21.6	0.0	21.6	21.5	0.0	23.0
User DelAdj:	Н	, ^L i		1.00	1.00	2 8	1.00	1.00		1.00	1.00
AdiDel/Veh:	30.5 9.1	9.1	16.7	2.7	2.7	21.6	0.0	21.6	21.5	0.0	23.0

Fri Nov 1, 1996 15:46:20 EXIST-AM.CMD

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FISCO/Port Vision 2000 BIS/EIR Existing Conditions AM Peak Hour

Level Of Service Computation Report

****	1994	HCM OF	HCM Operations Method	ons Me	thod *****	(Future	1994 HCM Operations Method (Future Volume Alternative) ************************************	le Alt	ernat:	*	* * *	******
Intersection #5 Maritime St./ 7th St. Extension ************************************	***** *****	ariti: *****	ne St., *****;	/ 7th	St. E3	St./ 7th St. Extension) <u>n</u> :*****	* * * *	***	*	*****	* * * *
Cycle (sec):	1	100		•		ritica	Critical Vol./Cap.				0.726	9 ,
oss Time (sec): Optimal Cycle:	ec):	83	3 (Y+K	4 4	sec) A	Average Level C): 0 (Y+K = 4 SeC) Average Delay (SeC/Veh): 83 Level Of Service:	elay (sec/ Service:	/veh):	•	11.1 B	H 69 H
Approach: Movement:		North Bound	ound - R	S J	South Bound	vund - R	L Ba	East Bound	und - R		West Bound	und - R
Control: Rights: Win. Green:	A 0	rot i	1	1	1 4 4	I .	T D	otect Inclu	ed de 0	1	: 530	ed de 0
uanes:		1 0			1 0			•		°	0	0 0
Volume Module Base Vol:	e: 184	340	0	0	205	338	70	0	41			0
Browth Adj:	Н	Н	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Initial Bse: Added Vol:	184	340	0 0	00	205	338	5 5	00	41	00	00	0 0
PasserByVol:			0	0	0	,	, 0	0	0		0	0
nitial Fut:	184		0			628	122	0	41	0	0	0
Jser Adj:	1.00		1.00	-		1.00		1.00	1.00		1.00	1.00
HF Volume.	184	340	9.0	3 0	202	T.00	122	00.1	1.00	7	90.	5.6
Reduct Vol:			0	0	0	0	0	0	10	. 0	• •	0
Reduced Vol:	184	340	0	0	205	628	122	0	41	0	0	0
PCE Adj:	1.00	Н	7	1.00	Н	1.00		1.00	1.00	1.00	1.00	1.00
ILF Adj:	1.00	М	1.05	1.00	-	1.00	1.00	1.00	1.00	1.00 1	1.00	1.00
inal Vol.:	184	357	۰ -	0 -	205	628	122	0	41	•	0	0
aturation F	Flow M	ow Module:	1	! ! !		-		! !	-	-	; ; ; ;	!
at/Lane:	1900	1900	1900	1900		1900	1900	1900	1900	1900	1900	1900
djustment:	0.73	0	1.00	1.00		0.65		1.00	0.65	1.00 1	1.00	1.00
anes:	1.00		00.0	0.00		1.00		00.0	1.00		00.0	0.00
inal Sat.:	1388	2923	0	0	1462	1242	1388	0	1242	٥ -	0	o ¯
apacity Anal	lysis	Module:	 	_		1 1 1 1 1				-		
ol/Sat:	0.13		0.00	00.0	0.14	0.51	0.09	0.00	0.03	0.00	00.0	0.00
rit Moves:	* * *					* * *	***					
reen/Cycle:	0.18		0:00	00.0	0.70	0.70		00.0	0.12	0.00	00.0	0.00
olume/Cap:	0.73	0.14	0.00	00.00	0.20	0.73	0.73	0.00	0.27	0.00	.00	0.00
evel Of Ser	vice N	္မွ	-	_		-	_		-			
elay/Veh:	31.6		0.0	0.0		7.7		0.0	26.1	0.0	0.0	0.0
ser DelAdj:	1.00		1.00	1.00	-	1.00		1.00	1.00	1.00 1	۰.	1.00
djuel/ven:	31.6	٠. د.	0,0	0.0		7.7	37.0	0.0	26.1	0.0		0.0
***********) ** **	4 * * * *) ** ***	> ** * *	۷ :	4 4 4 4 4 4 4	* * * * * * * * * * * * * * * * * * * *	2	- + + + + + + + + + + + + + + + + + + +) i) 	3 i

FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour	Port Vision 2000 EL Existing Conditions AM Peak Hour	EIS/EIR ons			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	ce Computa od (Future	Computation Report (Future Volume Alternative)	ative)		
**************************************	**************************************	**************************************	*	**************************************	
**************************************	*********** South Bound - T - R	********** East Bound	*	**************************************	
 Protected Prot Include In	Protected Include		-	Protected Include	
0 1 0	0 0	1 0 2 1	0 0		
	 	-	<u>:</u>		
18 129 1.00 1.00 1.	95 4 1.00 1.00	1.00	1 87 1.00 1.00	199	
62 18 129 0 0 0	95 0	13 16 0 0	1 87 0	199 372	
38 62 81	0 0 0 0	0 0	0 0	0 0	
1.00 1.00	Н	1.00		1.00	
1.00 1.00 1.00 1.00 1. 38 62 18 129	1.00 1.00 95 4	1.00 1.00 1. 13 16	1.00 1.00	1.00 1.00	
0 0 0 0 0 38 62 18 129	0 0	13 16	0 0	0 0 0	
1.00 1.00		1.00	7	1.00	
1.00	1.05 1.05 100 4	1.00 1.10 1. 13 18	1.10 1.00	1.05 1	
Saturation Flow Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
1900 1900		1900		1900	
1.00 1.55 0.45 1.00 1.	1.92 0.08	1.00 2.84 0.	0.16 1.00	2.00 1.00	
2194 641 1388		4112	- -	2923	
Module:	;		_	;	
0.03 0.03 0.09 0.	0.04 0.04	0.01 0.00 0. ****	0.00 0.00	0.06 0.07 0.30 ****	
0.07 0.07 0.22		0.05	0		
0.22 0.43 0.43 0.43 0.	0.22 0.22	0.43 0.09 0.	0.09 0.09	.09 0.10 0.43	
lodule:		;	_		
25.7 29.8 29.8 22.6 23 1.00 1.00 1.00 1.00 1.	23.6 23.6	36.8 29.5 29	1.00 1.00	3.3 4.5	
29.8 29.8 22.6		29.5	•	3.3	
•					

] 		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
			FISC	Fisco/Port Vision Existing Cor AM Peak F	visi ting M Pea	Fort Vision 2000 BI Existing Conditions AM Peak Hour	2000 BIS/EIR Iditions Iour	EIR				
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #7 Middle Harbor Rd./ Gate 2 Connection	1994 HCM	HCM OF	Level Of Service 1994 HCM Operations Method ***********************************	Of Ser ons Me	Service (Method ************************************	level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	putation R ture Volum ************************************	Report	ternat;	(ve)		
Cycle (sec): Loss Time (sec): Optimal Cycle:	(ec.) :	100 : 0 (Y+R 116	0 (Y+R 6	11 41	sec)	Critical Vol./Cap. Average Delay (sec, Level Of Service:	sal Vol ye Dela Of Ser	Vol./Cap. Jelay (sec Service:	Vol./Cap. (X): Delay (sec/veh): Service:	*	0.803 0.803 13.1 B	33 B
Approach: Movement:		North Bound	ound - R	: -	South Bound	South Bound East Bound L - T - R L - T - R	i i	East Bound	ound - R	, ,	******** West Bound - T -	vund - R
Control: Rights:	Α 1 1	Protected Include	ed de		Protected Include	ted tde	<u>-</u>	Protected Include	ed		Protected Include	ed
Min. Green: Lanes:	о [–]	° °	0 1 0	0	00	0	0	0	1 0	о н	0 71	00
Volume Modul Base Vol:	e: 55	0	73	-	٥	- 0		184	49	365	, r	
Growth Adj:	1.00	1.00	1.00	1.00	1.0	1.00	1.00	н	1.00	1.00	Н	1.00
Initial Bse:	55	0 0	73	00	0 0	00	0 0	18	49	365	555	0 0
PasserByVol:	0	0	0	0	0	0	0	0	0	4, U O	9 0	9 0
Initial Fut:	55	0	161	0		0	0		49	860		0
User Adj:	1.00	1.00	1.00	1.00	-	1.00	1.00		1.00	1.00		1.00
FHF Adj: PHF Volume:	1.00	1.00	1.00	0.0	1.00	 0	1.00	1.00	1.00	1.00	1.00	1.00
Reduct Vol:	0	0	0	0	٥	0	0	0	0	0	0	0
Reduced Vol:	52	0 ;	161	0		0	0	184	49		555	0
PCE Adj:	1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00
Final Vol.:	55	0	161	00.1	T.00	00.1	T.00	1.05	1.05	1.00	1.05 583	1.00
	 ow_Modii]e	96116		-		-	<u> </u>			-	-	
	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1 900	1000
Adjustment:	0.76	1.00	0.68	1.00		1.00	1.00		0.78		0.80	1.00
Lanes: Final Cat .	1.00	0.00	1.00	0.00	0.00	0.00	0.0	1.58	0.42		2.00	0.00
		-	7677	• <u> </u>	>		>	7227	979	1444	3040	0
Capacity Analysis Vol/Sat: 0.04		Module:	0.12	00.00	00.0	00.00	00.00	0.08	0.08	0.60	0.19	00.00
Green/Cycle:	0.16	00.00	91.0	0	0	0	c		6		2	6
Volume/Cap:	0.25	0.00	0.80	0.00	0	0.00	0.0	0.80	0.80		0.23	0.00
1 Of	Service Module	odule		<u> </u>		: 0				<u> </u>		- :
Detay/Veii: User DelAdi:		1.00	1.00	1.00	1.00	1.00	1.00	38.1	1.86.1	2.5	1.0	0.0
AdjDel/Veh:		0	40.1	0	2	2 0	3	20.00	20.0		9 .	3
		,		•	,			7.00	1.00	0	>	·

,	FISCO	FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour	n 2000 onditic Hour	EIS/EIR ons							
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Level Of Operation	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	omputat Future	cion Repor Volume Al	ternat:	; ; ; ; ;	* * * * * * * * * * * * * * * * * * *	1 * * · · · · · · · · · · · · · · · · ·			
**************************************	100 0 (Y+R = 62	**************************************	**************************************	**************************************	c. (X):	*	0.634 17.1 C	* * * * * * * * * * * * * * * * * * *			
Approach: North Bound South Bound Bast Bound Movement: L - T - R L - T - R	Bound	South Bound	ound - R	East Bound L - T -	Sound - R	*	West Bound L - T - R	nd R			
 Sp1	Phase	[dg	 lase	Split Phase	hase	<u> </u>	Split Phase				
Kignus: Inc. Min. Green: 0 (o o	0 0	0	0 0	o e	0	0 0	0			
Lanes: 0 1 0	1 · 0	0 1 0	0 1	0 1 0	0	. 0	. 0				
dule:		!	-			_		- :			
		26 308	9 6	200		-	322 59	9 6			
: 1.00 t.	÷	-	7.00		. 4	4		56			
Added Vol: 0 35 PasserBvVol: 0 0	53	0 495	00	00	0 0	00	00	00			
	æ	8	26		8	32	29	56			
1.00 1			1.00		H.	1.00	1.00	1.00			
PHF Adj: 1.00 1.00 PHF Volume: 8 95	0 1.00 5 84	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00			
			90			0	9 0	20			
8		26 803	56	9		322	59	. 99			
1.00		1.00 1.00	1.00	1.00 1.00		1.00	1.00	1.00			
MLF Adj: 1.05 1.05 Final Vol.: 8 100	5 1.05 0 88	1.05 1.05 27 843	1.05	1.00 1.00 8 6	1.00	322	1.00 59	1.00 56	-		
Sat/Lane: 1900 1900	e: 0 1900	1900 1900	1900	1900 1900	1900	1900 1900		1900			
:		0.77 0.77	0.77	0.75 0.75				0.72			
0.08			90.0	0.57 0.43		1.00	0.51	0.49			
Final Sat.: 111 1387	7 1221	88 2747	88	810 608	3 1242	1388	697	662			
na]	ule:		_			-		_			
Vol/Sat: 0.07 0.07	7 0.07	0.31 0.31	0.31	0.01 0.01	0.02	0.23	0.08	80.0			
Crit Moves: ****		48 0 48	4.8	0.04.0.04		0.37	75.0	75.0			
0.63			0.63	0.27		0.63	0.23	0.23			
Torrel Of County of Modules				-	!	-		-			
Delay/Veh: 30.3 30.3	3 30.3	13.1 13.1	13.1	30.5 30.5	5 42.3	18.3	14.2	14.2	•		
		1.00 1.00	1.00	1.00 1.00		-	1.00	1.00			
/Veh: 30.3 30.	30.	13.1 13.1	13.1	30.	5 42.3	18.3	14.2	14.2			
	•	•	•		•	•	•				

Table J.1-9 (Continued)

EXIST-PM.CMD	Fri Nov 1,	Fri Nov 1, 1996 15:45:58	28		Page 1-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	akland
		FISCO/Port Vision 2000 BIS/EIR Existing Conditions PM Peak Hour	S/EIR	1 1 1 1 1 1 1			
 	 	Trip Generation Report		; ; ; ; ; ; ;			
	Forecast f	Forecast for PM Peak Hour	onz				
Zone # Subzone	Amount Units	Rate Rate In Out		Trips Trips In Out	Total % Of Trips Total		
		-	1 1		; ; ; ; ;		
1 FISCO Areas Zone 1	1 FISCO Areas 2805.00 Employees '90 0.06 0.21 Zone 1 Subtotal	90 0.06 0.21	0.21	168 589 168 589	757 100.0 757 100.0		
COTAL	TOTAL 168			168 589	757 100.0		

EXIST-PM.CMD	Fri Nov 1, 1996 15:45:58	Page 2-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling A
	FISCO/Port Vision 2000 BIS/BIR Existing Conditions PM Peak Hour	BIS/BIR ns	
	Trip Distribution Re	port	
	Percent Of Trips Existing		
	To Gates 11 12 13 14 15 16		
Zone			
1 30.0	30.0 7.0 10.0 19.0 19.0 15.0		

EXIST-PM.CMD Fri Nov 1, 1996 15:45:58
FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
PM Peak Hour

Turning Movement Report PM Peak Hour Volume Northbound Southbound Eastbound Westbound Total Type Left Thru Right Left Thru Right Left Thru Right Volume

ed)	
Table J.1-9 (Continue	

EXIST-PM.CMD Fri Nov	Fri Nov 1, 1996 15:45:58		Page 4-1	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland
FISCO/Port Exis	FISCO/Port Vision 2000 BIS/BIR Existing Conditions PM Peak Hour	IR	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Impact	Impact Analysis Report Level Of Service		t t t t 1 1 1 1 1 1 1	
Intersection	Base Del/ V/	Future Del/ V/	Change in	
LOS Ven C LOS Ven C Arand WB Ramp C 22.7 0.886	LOS Veh C np C 22.7 0.886	LOS Veh C E 47.8 1.034	+25.048 D/V	
# 2 Maritime St./ W. Grand EB Ramp	np B 9.3 0.554	B 10.5 0.673	+ 1.157 D/V	
# 3 Maritime St./ Burma St.	B 6.3 0.441	B 5.6 0.516	-0.638 D/V	
# 4 Maritime St./ 14th St.	B 14.3 0.516	B 13.7 0.590	-0.641 D/V	
# 5 Maritime St./ 7th St. Extensio	lo B 10.7 0.361	B 13.3 0.543	+ 2.655 D/V	
# 6 7th St./ 7th St. Extension	C 17.5 0.473	C 17.5 0.473	+ 0.000 b/v	
# 7 Middle Harbor Rd./ Gate 2 Conn B 14.7 0.557	ın B 14.7 0.557	D 28.4 0.917 +13.722 D/V.	+13.722 D/V.	
# 8 Adeline St./ 3rd St.	В 13.7 0.320	B 13.1 0.505	-0.601 D/V	

Fri Nov 1, 1996 15:45:58

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			FISC	0/Port	Port Vision	FISCO/Port Vision 2000 EIS/EIR) EIS/	EIR				
							SHOT					
			,	Ē.		PM Peak Hour						
**************************************	1994 HCM	Ley HCM Opes ********	Level Of 1994 HCM Operations ************************************	Level Of Service Operations Method ************************************	Service (Method	Service Computation Report Method (Future Volume Alternative) ************************************	ation e Volu	Report me Alt	oort Alternative)	ive)	* * * * * * * * * *	*
**************************************	* * *	****	*****	* * * *	***	**************************************	11 Vol	*****	****	****	1.034	*****
Loss Time (sec Optimal Cycle:	9 e	180	0 (Y+R 0	U	sec) I	Average Level Of	ge Delay Of Servi	elay (sec Service:	(sec/veh) : ce:		47.8 E	oo pa
**************************************	*	**************************************	******* Bound	Sol	********* South Bound	**************************************	* M	****** East Bo	****** Bound	******	********** West Bound	***** und
Movement:	בי	E+	<u>د</u> ا		₽	۲. ۲.	і . 	E I	م ا ا		£ .	ب س
Control:	Δ.	Protected	ed	- A	Protected	ed	<u>-</u>	Protected	ed	 P2	Protected	 ed
Kıgnts: Min. Green:	0	Include	ge C	0	Include	ige O	-	Include	ide o	c	Include	g e
	, ₋	0	` o `		1 0	, ₋ ,	•	0	` . •	, o	° 0	٠,
	<u>-</u>					-	-			<u>:</u>	!	-
Base Vol:	820			0						95	490	ro
Growth Adj: Initial Bea.	1.00	1.00	.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Added Vol:	218		0	0	2 0	n 0	9 0	0	0	0	, ,	n o
PasserByVol:	0		0	0	0	0	0	0	0	0	0	0
Initial Fut:	1038		0			S			0	95	490	ß
User Adj:	1.00	ч.	1.00			1.00	•	н,	1.00	1.00	1.00	
FRF AUJ: PHF Volume:	1038	1001	7.00	. O	1001	1.00	3 · 0	3 °	1.00	1.00	1.00	1.00 5
Reduct Vol:	0		0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1038		0	0		2	0		0		490	ß
PCE Adj:	1.00	н,	1.00	1.00	-	1.00	1.00	Н	1.00		1.00	1.00
MLF Adj: Final Vol.:	1038	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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Page 11-1

FISCO/Port Vision 2000 EIS/EIR Existing Conditions PM Peak Hour

Fri Nov 1, 1996 15:45:58

EXIST-PM.CMD

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EXIST-PM.CMD

Table J.1-10

FISCO/Port Vision 2000 EIS/EIR Train Traffic At Roadway Crossings Existing Weekdays (After UP/SP Merger)

		Nun	nber of T	rains in l	Both Direction	าร	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	gnt *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	16	12			32	60	60
2. Gilman Street	4	16	12	4	4	40	60	60
3. Camelia Street	4	16	12	4	4	40	60	60
4. Cedar Street	4	16	12	4	4	40	60	60
5. Virginia Street	4	16	12	4	4	40	60	60
6. Hearst Avenue	4	16	12	4	4	40	60	60
7. Addison Street	4	16	12	4	4	40	- 60	60
8. Bancroft Way	4	16	12	4	4	40	60	60
9. 67th Street	4	16	12	4	4	40	45	45
10. 66th Street	4	16	12	4	4	40	45	45
11. 65th Street	4	16	12	4	4	40	45	45
12. Market Street	10	26	4	4		44	15	15
13. M. L. King Blvd.	10	26	4	4		44	15	15
14. Clay Street	10	26	4	4		44	15	15
15. Washington Street	10	26	4	4		44	15	15
16. Broadway	10	26	4	4		44	15	15
17. Franklin Street	10	26	4	4		44	15	15
18. Webster Street	10	26	4	4		· 44	15	15
19. Oak Street	10	26	4	4		44	15	15
20. 5th Avenue	2	6	4	4		16	40	20
21. 29th Avenue	2	6	4	4		16	60	40
22. Fruitvale Avenue	2	6	4	4		16	60	40
23. 37th Avenue	2	6	4	4		16	60	40

^{*} Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.1-11

FISCO/Port Vision 2000 EIS/EIR Gate Down Time At Roadway Crossings Existing Weekdays (After UP/SP Merger)

	Ga	Total Gate				
Crossing Street	<u> </u>	Passenger *			Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	32
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	37
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	37
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	37
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	37
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	37
7. Addison Street	0.7	0.6	1.6	0.7	0.6	37
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	37
9. 67th Street	0.8	0.7	2.0	0.8	0.6	44
10. 66th Street	0.8	0.7	2.0	0.8	0.6	44
11. 65th Street	0.8	0.7	2.0	0.8	0.6	44
12. Market Street	1.4	1.0	5.0	1.4	0.0	66
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	66
14. Clay Street	1.4	1.0	5.0	1.4	0.0	66
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	66
16. Broadway**	1.4	1.0	5.0	1.4	0.0	66
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	66
18. Webster Street	1.4	1.0	5.0	1.4	0.0	66
19. Oak Street	1.4	1.0	5.0	1.4	0.0	66
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	26
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	17
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	17
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	17

^{*} Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Gate Down Time Per Train = (a + b / 1.47 / c) / 60) where, a = 30 seconds track clearance time b = train length (ft.) c = train speed (mph)

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.1-12

FISCO/Port Vision 2000 EIS/EIR Traffic Volumes at Railroad Crossings Existing Weekdays (After UP/SP Merger)

	I Total			
		Average Daily		Average
Crossing Street	Jurisdiction	Traffic for Year	Year Traffic Was	Daily Traffic
		Traffic Was	Counted	(1996)
		Counted		(1000)
Cutting Boulevard	Richmond	26,892	1994	27,430
2. Gilman Street	Berkeley	17,413	1986	19,150
Camelia Street	Berkeley		1996 (Estimated Max.)	2,000
4. Cedar Street	Berkeley	3,413	1986	3,750
5. Virginia Street	Berkeley	1,584	1986	1,740
6. Hearst Avenue	Berkeley	5,758	1986	6,330
7. Addison Street	Berkeley		1996 (Estimated Max.)	
8. Bancroft Way	Berkeley	*	1996 (Estimated Max.)	
9. 67th Street	Emeryville		1996 (Estimated Max.)	
10. 66th Street	Emeryville		1996 (Estimated Max.)	
11. 65th Street	Emeryville		1995	2,700
12. Market Street	Oakland	3,655	1996	3,660
13. M. L. King Blvd.	Oakland	309	1976	340
14. Clay Street	Oakland	1,531	1977	1,680
15. Washington Street	Oakland	613	1976	670
16. Broadway	Oakland	11,833	1978	12,900
17. Franklin Street	Oakland	1,626	1976	1,790
18. Webster Street	Oakland	3,111	1974	3,450
19. Oak Street	Oakland	3,340	1976	3,670
20. 5th Avenue	Oakland	6,224	1976	6,850
21. 29th Avenue	Oakland	9,034	1990	9,310
22. Fruitvale Avenue	Oakland	22,304	1993	22,640
23. 37th Avenue	Oakland	1,070	1994	1,080

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Note: Escalation factors were applied to escalate counts to 1996 estimated values as follows:

Cities of Richmond & Berkeley - 1% per year; City of Oakland 1/2% per year.

Table J.1-13

FISCO/Port Vision 2000 EIS/EIR Vehicle Delay at Railroad Crossings Existing Weekdays (After UP/SP Merger)

Crossing Street	Jurisdiction	Average Daily Traffic	Total Gate Down Time	Vehicular Delay
		(1996)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	27,430	. 32	9.9
2. Gilman Street	Berkeley	19,150	37	7.5
3. Camelia Street	Berkeley	2,000	37	0.8
4. Cedar Street	Berkeley	3,750	37	1.5
5. Virginia Street	Berkeley	1,740	37	0.7
6. Hearst Avenue	Berkeley	6,330	37	2.5
7. Addison Street	Berkeley	2,000	37	0.8
8. Bancroft Way	Berkeley	2,000	37	0.8
9. 67th Street	Emeryville	2,000	44	1.1
10. 66th Street	Emeryville	2,000	44	1.1
11. 65th Street	Emeryville	2,700	44	1.5
12. Market Street	Oakland	3,660	66	4.1
13. M. L. King Blvd.	Oakland	340	66	0.4
14. Clay Street	Oakland	1,680	66	1.9
15. Washington Street*	Oakland	670	66	0.8
16. Broadway*	Oakland	12,900	66	14.6
17. Franklin Street*	Oakland	1,790	66	2.0
18. Webster Street	Oakland	3,450	66	3.9
19. Oak Street	Oakland	3,670	66	4.2
20. 5th Avenue	Oakland	6,850	26	3.4
21. 29th Avenue	Oakland	9,310	17	1.9
22. Fruitvale Avenue	Oakland	22,640	17	4.7
23. 37th Avenue	Oakland	1,080	17	0.2
Total Delay	70.3			

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996 Appendix J.2 Marine Terminal Traffic Analysis

Marine Terminal Traffic Analysis

Fleet Industrial Supply Center, Oakland (FISCO) **Disposal and Reuse EIS/EIR**

Project W96021

October 28, 1996

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1. Overview	2
2. Analysis Data and Assumptions	4
3. Analysis Results	19
4. APPENDIX A: PROJECTED SHIP CALLS IN 2010	30
This report was prepared by Jordan Woodman Dobson for the Port of Oakland. JWD is working for Tetra Tech in the development of an EIS / EIR for the Port.	

Quality Assurance

Author: Mark Sisson MAS
Editor: Meri Furnari WE
Principal: Thomas Ward, SE

1. Overview

1.1 Introduction

This report provides data in support of the Traffic Impact section of the Environmental Impact Statement and Report (EIS/EIR) for the redevelopment of the Naval Fleet Industrial Supply Center, Oakland (FISCO).

The proposed FISCO site redevelopment includes plans for new marine terminals along the Port of Oakland's Inner Harbor Channel, as well as the development of a new Joint Intermodal Rail Terminal (JIT). The new marine terminals are expected to generate traffic to and from the new JIT and to and from regional roads and highways.

Jordan Woodman Dobson (JWD) was contracted to estimate volumes of automobile and truck traffic that can be generated by existing and new marine terminal developments in 1996 and 2010. JWD estimated peak-day traffic generated by marine terminals in four zones: Outer Harbor, 7th Street, Middle Harbor, and a New Terminal Area.

The "peak day" was assumed to be an average day during a peak traffic week. Three time periods during a peak gate day were of particular interest: the morning peak, 7 AM to 9 AM; the evening peak, 4 PM to 6 PM; and the lunch peak, 11 AM to 12 noon.

1.2 PROCESS

TRUCK TRAFFIC

Truck traffic for 1996 is estimated from 1995 data by assuming a uniform increase in container throughput per terminal and ratio of truck trips to ship lifts.

Truck traffic for 2010 was estimated by assuming that container shipping will grow at the rate predicted by the *San Francisco Bay Area Seaport Plan* prepared by Multitrans Corporation in 1994. The number of ship moves to rail was assumed to be variable with at least 5% of ship traffic moving by rail. The number of ship moves by road to local markets was assumed to be fixed. Total volumes were adjusted to not exceed the capacity of each option as determined by JWD.

The marine terminal areas within the Port were grouped into four zones, summarized in Table 1.1.

Zone	Code	Zone	Terminals
New Terminal Area	NT	1	To Be Built
Middle Harbor	MH	6	APL, Howard
7th Street	7th St	7	TraPac, Matson, MTC
Outer Harbor	OH	8	Sea-Land, Yusen, Maersk, TransBay

Table 1.1
Port of Oakland Terminals and Zones

Four alternative FISCO redevelopment plans are under consideration for New Terminal Area, Zone 1. These include four alternatives labeled Options A through D, as well as a No-Build option. The acreages for these options were based on proposed development plans presented in the EIS/EIR document.

The acreages of the existing marine terminals in Zones 6 through 8 were taken from the 1996 edition of *Lloyds Ports of the World*. According to Tetra Tech, Inc., the size of the existing terminals would not increase between now and 2010, except in Development Alternative B where Zone 8 was assumed to expand by 22 acres.

The daily truck trips were distributed over the course of a day according to an observed truck arrival pattern, and a derived truck departure pattern based on the arrival pattern and a truck turnaround time. JWD used data collected in 1996 at Marine Terminals Corporation's (MTC) 7th Street terminal to estimate the hourly truck traffic arrival and departure patterns for terminals.

CAR TRAFFIC

Car traffic at the Port was estimated based on terminal acreage, information regarding terminal employment, and assumptions about trips generated per employee. Car traffic was distributed over the course of the day according to traffic counts on roads within the Port of Oakland. These counts were provided by Dowling Associates.

2. Analysis Data and Assumptions

2.1 THROUGHPUT

1995 THROUGHPUT

Table 2.1 shows statistics about the container terminals at the Port of Oakland for 1995. There were approximately 1.75 twenty-foot equivalent units (TEUs) per container, indicating that approximately 75% of containers were 40 feet long and 25% of containers were 20 feet long.

		Gross	1995	Thruput	Thruput
Zone	Terminal	Area	Thruput	per Gross	per Gross
		(acres)	(ship lifts)	Acre	Acre
				(conts)	(TEUs)
Zone 6	APL	82.8	162,407	1,961	3,433
(Middle Harbor)	Howard	48.9	94,359	1,930	3,375
Subtotal		131.7	256,766	1,950	3,413
Zone 7	TraPac	34.6	39,377	1,138	1,992
(7th Street)	Matson	65.5	93,158	1,422	2,490
	MTC	56.6	136,301	2,408	4,215
Subtotal		156.7	268,836	1,716	3,003
Zone 8	Sea Land	65.5	111,146	1,697	2,970
(Outer Harbor)	Yusen	40.0	83,502	2,088	3,650
	Maersk	45.7	71,031	1,554	2,970
	TransBay	29.2	<i>57,</i> 255	1,961	3,436
Subtotal		180.3	322,934	1,791	3,134
Total		468.7	848,536	1,810	3,168

Table 2.1 1995 Terminal Statistics

The Port as a whole handled about 1,500,000 stevedoring TEUs with 470 gross acres of marine terminal, or 3,200 TEUs per acre per year.

1996 THROUGHPUT

The 1996 throughput volume was calculated by increasing the 1995 throughput at each terminal by an assumed growth rate of 7%.

2010 THROUGHPUT

Throughput volume for 2010 was estimated based on the container shipping growth projections from the Seaport Plan. The future container volumes were expressed in terms of metric tons of cargo per year instead of the more common TEUs.

Table 2.2 converts the projections from the Seaport Plan into containers based on the ratio of containers to forecast tonnage in 1995.

Year	1995	2000	2005	2010
Metric Tons	11,191,000	14,334,000	18,282,000	22,227,000
Containers	848,536	1,086,848	1,386,197	1,685,319
Annual Growth		5.1%	5.0%	4.0%

Table 2.2
Container Volume Forecast - Seaport Plan

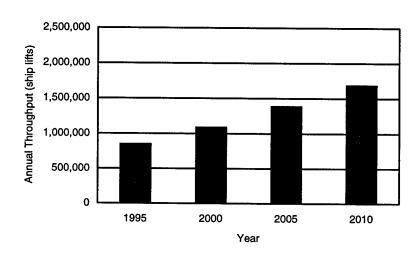


Figure 2.1
Projected Container Traffic - Seaport Plan

2.2 OVER-THE-ROAD VS. RAIL TRAFFIC

When containers arrive in the Port they either travel to their ultimate destination by truck or are drayed by truck to nearby intermodal rail yards for inland transport. For purposes of this traffic study, these two types of moves are referred to as "Over the Road" (OTR) and "Rail" moves.

OTR containers have destinations in the area served by the Port of Oakland. JWD assumed that these containers will continue to arrive in the San Francisco Bay ports regardless of future development at the Port of Oakland.

Rail moves are bound for final destinations as far away as the East Coast. The volume of this traffic moving through the Port of Oakland will depend on the attractiveness of Oakland as a rail gateway compared with other West Coast ports.

The Port of Oakland Joint Intermodal Terminal Operational Analysis Report (January, 1995) indicates that 148,500 containers used rail facilities in the Port of Oakland in 1994, corresponding to roughly 20% of total Port throughput. OTR moves comprised the remaining 80% of ship lifts in 1994.

The Seaport Plan makes no mention of the relationship between OTR and Rail traffic. JWD assumed that OTR traffic would constitute 80% of the Seaport Plan projected container traffic.

If the Port improves its attractiveness to Rail traffic by building the JIT, Rail traffic through Oakland would likely increase. Similarly, Rail traffic would decrease if terminals become congested by OTR moves.

The upper bound on Rail traffic through the Port of Oakland was calculated as the minimum of:

- 1. The capacity of nearby railyards. The estimated capacity of the Joint Intermodal Terminal in 2010 has been set at 1.2 million lifts per year.
- 2. The capacity of the marine terminals. JWD estimated the capacity of terminals at the Port of Oakland in 2010 as 4,700 TEUs, or 2,685 ship lifts, per acre per year. This is 500 TEUs per acre more than the busiest terminal handled in 1996.
- 3. The potential market for intermodal cargo. This factor is perhaps the most difficult to estimate but JWD projects the fraction of Port traffic that moves by rail will not be higher than 40% of the total traffic in 2010. This is twice the Rail traffic ratio that the Port experienced in 1994.

The lower bound on rail demand was set at 5% of the total marine terminal traffic, reflecting a portion of maritime traffic that would move by rail through the Port of Oakland regardless of congestion caused by OTR demand.

PORT CAPACITY

Table 2.3 illustrates the total capacity of each of the proposed development Options, based on 4,700 TEUs per acre per year. The terminal acreage within the Outer Harbor, 7th Street, and Middle Harbor Zones remains the same between 1996 and 2010 for Options A, C, and D, and the No-Build Option. Terminals are developed within the New Terminal Area Zone in Options A, B, C, and D. In Option B, an additional 22 acres of terminal are developed in the Outer Harbor Zone.

Zone	No-Build	Option A	Option B	Option C	Option D
1 - New Terminal Area	0	260	100	290	278
6 - Middle Harbor	132	132	132	132	132
7 - 7 th Street	157	157	157	157	157
8 - Outer Harbor	180	180	202	180	180
Total Acreage	469	729	591	759	747
Total Capacity (moves)	1,260,000	1,960,000	1,590,000	2,040,000	2,010,000

Table 2.3
Terminal Acreages and Capacities

Figure 2.2 depicts the terminal acreages graphically. Figure 2.3 depicts the terminal capacities graphically.

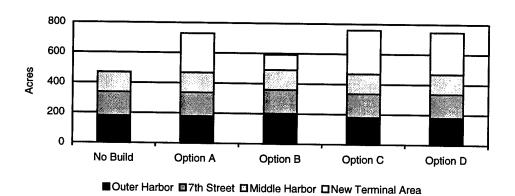


Figure 2.2 Terminal Acreages

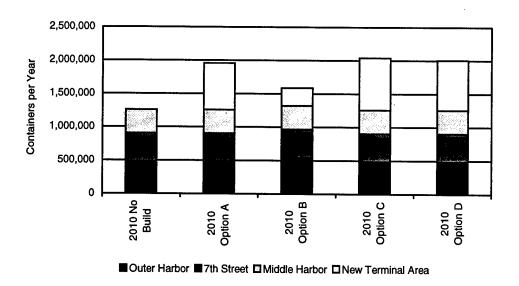


Figure 2.3 Terminal Capacities

Figure 2.4 shows the relationship between capacities for the various options, the lower-bound potential demand, and upper-bound demands #1 and #3.

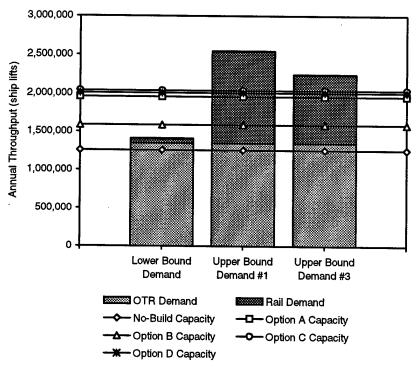


Figure 2.4 Port Capacity vs. Potential 2010 Demand

Figure 2.4 shows:

The OTR demand in 2010 exceeds the marine terminal capacities of the No-Build Option.

The upper-bound demands fixed by the JIT capacity (#1) and the rail market potential (#3) will exceed the capacities of all options.

These relationships imply that Rail demand in 2010, and therefore Port demand, will be limited by the overall capacities of the marine terminals, as summarized in Table 2.3, rather than by the other factors.

Table 2.4 summarizes the 2010 total demand, and its breakdown into OTR and Rail traffic, for each option. For the No-Build Option, it was assumed that all but 5% of Rail traffic would be handled by other Ports. In addition, it should be noted that about 152,000 OTR lifts in the No-Build Option would be handled at other Bay Area Ports such as Richmond or San Francisco.

Zone	No-Build	Option A	Option B	Option C	Option D
OTR Traffic - Oakland	1,196,000	1,348,000	1,348,000	1,348,000	1,348,000
Rail Traffic - Oakland	64,000	612,000	242,000	692,000	662,000
Total Traffic - Oakland	1,260,000	1,960,000	1,590,000	2,040,000	2,010,000
Rail / Total Traffic - Oakland	5.0%	31.2%	15.2%	33.9%	32.9%
OTR Traffic -Other Bay Ports	152,000	0	0	0	0

Table 2.4 Projected Port Traffic 2010

2.3 TRUCK TRAFFIC

Peak truck traffic was calculated for 1996 and 2010 based on several assumptions regarding terminal operations drawn from historical data and JWD's experience and professional judgment.

Gate Operating Schedule: Terminals gates were assumed to operate 52 weeks per year and five days per week.

Peak Week Factor: The peak week has 1.25 times as many ship lifts as the average week.

Gate Transactions to Ship Lift Ratio: Each ship lift generates 1.33 container transactions through the gate. The ratio is not 1.0 because the marine terminals act as storage depots for empty containers that may move in and out of the terminal without generating a ship lift, as shown in Figure 2.5.

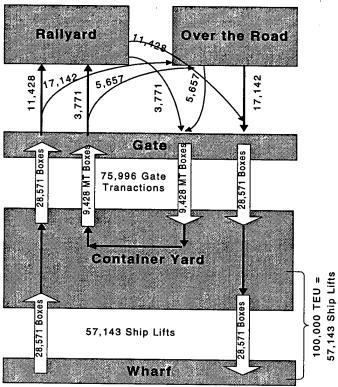


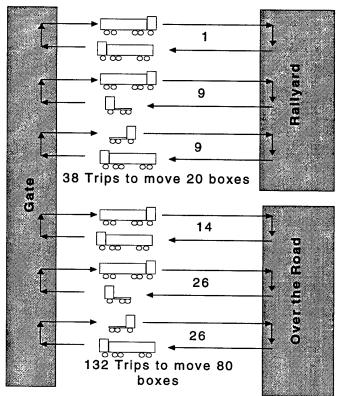
Figure 2.5
Container Flow at the Port of Oakland, 2010

Truck Trips to Gate Transactions Ratio: Each gate transaction in 1996 generates an average of 1.7 truck trips. Truck trips include trucks that enter or leave the terminal with or without a container. The ratio is not 2.0 because some trucks both deliver and retrieve containers from the terminal in a single visit as described in Table 2.5 and Figure 2.5. The fraction of OTR vs. Rail trips (and therefore the overall weighted average of truck trips per gate transaction) will vary with each development alternative.

	1996	1996		10
	OTR	Rail	OTR	Rail
Fraction of Ship Lifts	80%	20%	Variable	Variable
Fraction of Hauls 1-way	65%	90%	65%	90%
Fraction of Hauls 2-way	35%	10%	35%	10%
Truck Trips per Gate	1.65	1.90	1.65	1.90
Transaction				

Table 2.5
Truck Trips per Gate Transaction

Figure 2.6 describes the 80%/20% split found in 1996 as an illustration of the relationship between truck trips and gate transactions.



Total: 170 trips to move 100 boxes

Figure 2.6
Gate Transactions vs. Truck Trips

Table 2.6 shows how these factors were used to estimate truck trips for the Port in 2010 under each development option.

Item	Factor	No Build	Α	В	С	D
Annual Thruput		1,258,925	1,957,211	1,586,582	2,037,782	2,005,554
Weekly Thruput	1/52	24,210	37,639	30,511	39,188	38,568
Pk Week Thruput	1.25	30,263	47,048	38,139	48,985	48,210
Avg Day Thruput	1/5	6,053	9,410	7,628	9,797	9,642
Daily Gate Moves	1.33	8,050	12,515	10,145	13,030	12,824
OTR Fraction		95.0%	68.9%	85.0%	66.2%	67.2%
Rail Fraction		5.0%	31.1%	15.0%	33.8%	32.8%
Gate moves OTR		7,647	8,621	8,621	8,621	8,621
Gate moves to Rail		402	3,894	1,524	4,409	4,203
Trips OTR	1.65	12,618	14,225	14,225	14,225	14,225
Trips to Rail	1.90	765	7,398	2,895	8,377	7,986
Total Truck Trips		13,383	21,623	17,120	22,602	22,210

Table 2.6
Calculation of 2010 Daily Truck Trips from Annual Throughput

Peak truck trips were calculated for each zone based on the acreages of each zone. Table 2.7 shows the fraction of total Port area at each Zone and Table 2.8 shows the number of truck trips generated by each zone. Figure 2.7 shows the calculated daily truck trips by zone.

Zone	2010	2010	2010	2010	2010
	No Bld	Opt A	Opt B	Opt C	Opt D
1 - New Terminal Area	0.0%	35.7%	16.9%	38.2%	37.2%
6 - Middle Harbor	28.1%	18.1%	22.3%	17.4%	17.6%
7 - 7th Street	33.4%	21.5%	26.5%	20.6%	21.0%
8 - Outer Harbor	38.5%	24.8%	34.3%	23.8%	24.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.7
Fraction of Port Area in Each Zone - 2010

Zone	2010	2010	2010	2010	2010
	No Bld	Opt A	Opt B	Opt C	Opt D
1 - New Terminal Area	0	7,715	2,898	8,639	8,268
6 - Middle Harbor	3 <i>,</i> 760	3,908	3,817	3,923	3,917
7 - 7th Street	4,473	4,648	4,540	4,667	4,660
8 - Outer Harbor	5,150	5,352	5,865	5,373	5,365
Total Truck Trips	13,383	21,623	17,120	22,602	22,210

Table 2.8 2010 Daily Truck Trips During Peak Week

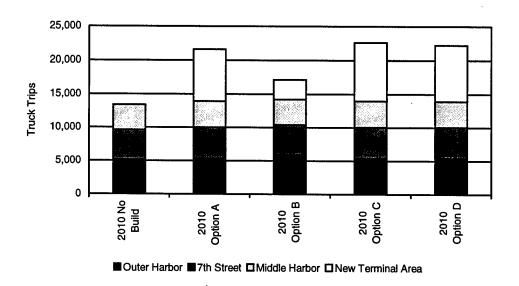


Figure 2.7
2010 Daily Truck Trips During Peak Week

2.4 TRUCK ARRIVAL AND DEPARTURE PATTERNS

Truck arrival and departure patterns were used to distribute daily truck trips over the course of the day. A truck arrival pattern observed at MTC's 7th Street terminal was used as the arrival pattern for all terminals. MTC's 7th Street terminal gate operates during the day only. This is the current practice at the Port of Oakland terminals and it was assumed to continue into 2010. The truck arrival pattern was applied to the total daily truck arrivals estimated for each terminal to distribute Port truck trips by hour.

A truck departure pattern was estimated from the truck arrival pattern, assuming that truck departures would take place 30 minutes after arrival.

Figures 2.8 and 2.9 respectively show the arrival and departure patterns of truck trips. Traffic is heavy after the terminal opens, is light during lunch, and trails off toward gate closing time.

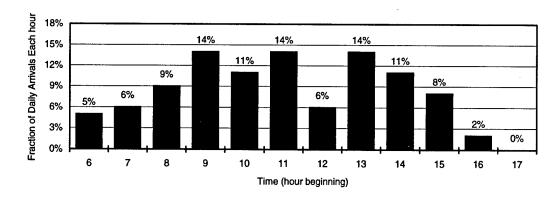


Figure 2.8
Truck Arrival Pattern

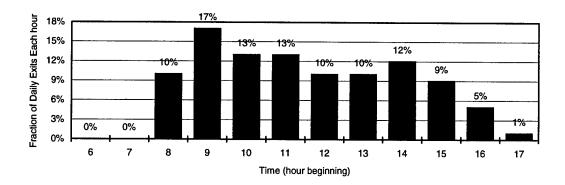


Figure 2.9
Truck Departure Pattern

2.5 PORT CAR TRIP GENERATION

The calculation of car trips to and from the terminals was based on terminal acreage, an estimate of the number of employees per acre, and the number of daily car trips per employee.

EMPLOYMENT AT TERMINALS

In 1996, in a "unit" terminal of 50 acres, JWD estimates that 120 employees work the day shift and 55 work the night shift when a ship is on berth. When there is no ship on berth, 60 employees work the day shift and 0 work the night shift.

The number of employees working the "unit" (50-acre terminal) is expected to increase at the same rate as the increase in terminal productivity (2.6% per year). This employment information is presented in Table 2.9.

	Ship on	Berth	No Ship or	n Berth
Year	Day	Night	Day	Night
1996	120	55	60	0
2010	172	<i>7</i> 9	86	0

Table 2.9
Marine Terminal Employment

During peak periods, JWD estimates that two-thirds of the terminals will have a ship on-berth.

DAILY CAR TRIPS

Table 2.10 shows the number of daily car trips generated based on the employment at a 50-acre unit terminal, and assumes an average of 3.5 employee trips per day. This estimate considers the fact that nearly all marine terminal employees drive alone to work. In addition, many employees leave the terminal during lunch. Terminal visitors also generate some auto trips.

Fraction of Time	Ship on Berth 2/3	No Ship on Berth 1/3	Average
Year		2,0	
1996	613	210	478
2010	877	301	685

Table 2.10
Peak Daily Car Trip Generation for a 50-Acre Terminal Unit

DISTRIBUTION OF CAR TRIPS

The distribution of car trips throughout the day, shown in Table 2.11, reflects employees' work schedules. These fractions were derived from traffic counts on Port of Oakland roads taken by Dowling Associates. The percentage indicates what fraction of the total daily auto trips occur as an entry or exit in the given hour.

	Entries to	Exits from
	Terminal	Terminal
0600 - 0700	7.3%	0.4%
0700 - 0800	8.4%	0.4%
0800 - 0900	4.9%	0.3%
0900 - 1000	4.2%	0.5%
1000 - 1100	3.2%	2.1%
1100 - 1200	3.4%	3.4%
1100 - 1300	3.7%	3.7%
1300 - 1400	3.1%	3.1%
1400 - 1500	1.3%	5.1%
1500 - 1600	0.4%	7.6%
1600 - 1700	0.4%	7.4%
1700 - 1800	0.7%	5.9%
0600 - 1800	41.0%	39.9%

Table 2.11
Car Trip Distribution

Figure 2.10 illustrates the distribution of car trips.

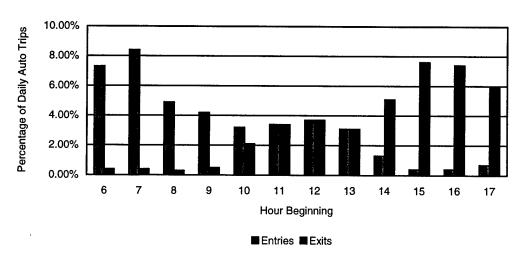


Figure 2.10
Distribution of Car Trips Throughout Day

3. Analysis Results

This section summarizes the results for both truck and auto trips in order to estimate total marine terminal traffic in 1996 and 2010.

3.1 1996 TRAFFIC

Table 3.1 shows peak truck trips for existing zones for key hours during the day broken down by entries and exits.

Zone:	6 - Middle F	Iarbor	7 - 7th St	reet	8 - Outer F	Iarbor
	Entries	Exits	Entries	Exits	Entries	Exits
0600-0700	73	0	76	0	91	0
0700-0800	90	0	94	0	113	0
0800-0900	140	149	147	156	176	188
0900-1000	206	252	216	264	259	317
1000-1100	169	187	1 7 7	196	212	236
1100-1200	213	191	223	200	268	240
1200-1300	88	150	92	157	110	189
1300-1400	209	149	219	156	263	187
1400-1500	160	185	168	194	202	233
1500-1600	115	138	120	144	144	173
1600-1700	30	73	32	76	38	91
1700-1800	0	15	0	16	0	19

Table 3.1

1996 Peak - Daily Truck Trips During Peak Week by Zone

Table 3.2 describes the total peak truck traffic moving to and from the rail yards in 1996.

	Total Truck	Truck Trips
	Trips	for Rail Yard
Middle Harbor (6)	2,987	668
7th Street (7)	3,127	699
Outer Harbor (8)	3,756	840
Total	9,870	2.207

Table 3.2

1996 Peak - Daily Truck Traffic During Peak Week to Rail Yard

Table 3.3 shows the distribution of peak car trips associated with Port employment in 1996.

Zone:	6 - Middle 1	Harbor	7 - 7th St	reet	8 - Outer H	Iarbor
	Entries	Exits	Entries	Exits	Entries	Exits
0600-0700	93	5	110	6	127	7
0700-0800	106	6	126	7	145	8
0800-0900	62	3	73	4	85	4
0900-1000	52	6	62	7	72	8
1000-1100	40	27	48	32	55	37
1100-1200	43	43	51	51	58	58
1200-1300	47	47	56	56	64	64
1300-1400	39	39	46	46	53	53
1400-1500	16	65	19	77	22	89
1500-1600	5	96	6	114	7	131
1600-1700	5	94	6	112	7	128
1700-1800	8	74	10	88	11	101

Table 3.3
1996 Peak - Daily Car Trips During Peak Week by Zone

Table 3.4 and Figure 3.1 illustrate the distribution of peak truck and car trips for the Port as a whole throughout the day.

	Truck	Truck	Total	Car	Car	Total
	Entries	Exits	Truck	Entries	Exits	Car
			Trips			Trips
0600-0700	240	0	240	329	17	347
0700-0800	296	0	296	376	20	396
0800-0900	463	493	957	220	12	231
0900-1000	681	834	1,515	187	21	208
1000-1100	558	620	1,178	143	95	238
1100-1200	703	631	1,334	152	152	304
1200-1300	290	497	787	167	167	334
1300-1400	692	491	1,183	138	138	277
1400-1500	530	611	1,142	58	231	288
1500-1600	380	455	835	18	341	359
1600-1700	100	240	341	18	334	351
1700-1800	0	50	50	29	262	292

Table 3.4

1996 Peak - Daily Truck and Car Trips During Peak Week by Hour of Day for the Whole Port

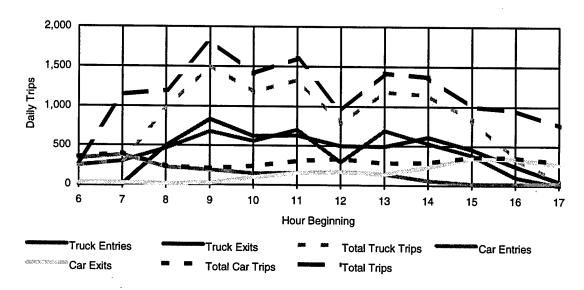


Figure 3.1 1996 Peak - Daily Port Car and Truck Trips During Peak Week

3.2 2010 TRAFFIC

Tables 3.5 through 3.9 describe peak daily truck and car traffic for each option in 2010.

Zone:	1		6		7		8	
	New Ter	minal	Middle F	- Harbor	7th St	reet	Outer F	Iarbor
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	0	0	113	0	134	0	154	0
8-9	0	0	177	188	210	224	242	257
9-10	0	0	259	318	30 9	378	355	435
10-11	0	0	213	236	253	281	291	323
11-12	0	0	268	240	319	286	367	329
12-13	0	0	111	189	132	225	151	259
13-14	0	0	264	187	314	223	361	256
14-15	0	0	202	233	240	277	277	319
15-16	0	0	145	173	172	206	198	237
16-17	0	0	38	91	46	109	52	125
17-18	0	0	0	19	0	23	0	26
CARS								
7-8	0	0	151	8	180	9	207	11
8-9	0	0	88	5	105	6	121	6
9-10	0	0	<i>7</i> 5	8	89	10	103	11
10-11	0	0	57	38	68	46	79	52
11-12	0	0	61	61	73	73	84	84
12-13	0	0	67	67	80	80	92	92
13-14	0	0	56	56	66	66	76	76
14-15	0	0	23	93	28	110	32	127
15-16	0	0	7	137	9	163	10	188
16-17	0	0	7	134	8	160	10	184
17-18	0	0	12	106	14	126	16	145

Table 3.5

Daily Trips During Peak Week - No-Build Option

Zone:	1	****	6		7		8	
	New Ter	minal	Middle F	larbor	7th St	reet	Outer H	larbor
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	231	0	117	0	139	0	160	0
8-9	362	386	183	195	218	232	251	268
9-10	532	652	270	330	321	393	369	4 52
10-11	436	484	221	245	263	292	303	336
11-12	550	493	279	250	331	297	381	342
12-13	227	388	115	197	137	234	157	269
13-14	541	384	274	195	326	231	375	266
14-15	415	478	210	242	250	288	288	331
15-16	297	356	150	180	179	214	206	247
16-17	79	188	40	95	47	113	54	130
17-18	0	39	0	20	0	24	0	27
CARS							1	
7-8	299	16	151	8	180	9	207	11
8-9	175	9	88	5	105	6	121	6
9-10	148	16	75	8	89	10	103	11
10-11	113	76	57	38	68	46	<i>7</i> 9	52
11-12	121	121	61	61	73	73	84	84
12-13	133	133	67	67	80	80	92	92
13-14	110	110	56	56	66	66	76	76
14-15	4 6	183	23	93	28	110	32	127
15-16	14	271	7	137	9	163	10	188
16-17	14	265	7	134	8	160	10	184
17-18	23	208	12	106	14	126	16	145

Table 3.6
Daily Trips During Peak Week - Option A

Zone:	1		6		7		8		
	New Terminal		Middle Harbor		7th Street		Outer Harbor		
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits	
TRUCKS									
7-8	87	0	114	0	136	0	176	0	
8-9	136	145	179	191	213	227	275	293	
9-10	200	245	263	323	313	384	405	496	
10-11	164	182	216	240	257	285	332	368	
11-12	207	185	272	244	324	290	418	375	
12-13	85	146	112	192	134	229	173	295	
13-14	203	1 44	268	190	318	226	411	292	
14-15	156	179	205	236	244	281	315	363	
15-16	111	134	147	176	175	209	226	270	
16-17	30	70	39	93	46	110	60	143	
17-18	0	15	0	19	0	23	0	30	
CARS									
7-8	115	6	152	8	180	9	232	12	
8-9	67	4	89	5	105	6	136	7	
9-10	57	6	75	8	89	10	116	13	
10-11	44	29	58	38	68	46	88	59	
11-12	46	46	61	61	73	73	94	94	
12-13	51	51	67	67	80	80	103	103	
13-14	42	42	56	56	66	66	86	86	
14-15	18	70	23	93	28	110	36	143	
15-16	5	104	7	138	9	163	11	211	
16-17	5	102	7	135	8	160	11	206	
17-18	9	80	12	106	14	126	18	162	

Table 3.7
Daily Trips During Peak Week - Option B

Zone:	1		6		7		8		
	New Terminal		Middle Harbor		7th Street		Outer Harbor		
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits	
TRUCKS									
7-8	259	0	118	0	140	0	161	0	
8-9	406	432	184	196	219	233	252	269	
9-10	596	730	271	332	322	394	371	454	
10-11	489	542	222	246	264	293	304	337	
11-12	616	552	280	251	333	298	383	343	
12-13	254	435	115	197	137	235	158	270	
13-14	606	430	275	195	327	232	377	267	
14-15	464	535	211	243	251	289	289	333	
15-16	332	398	151	181	179	215	207	248	
16-17	88	210	40	95	48	113	55	131	
17-18	0	44	0	20	0	24	0	27	
CARS									
7-8	333	18	151	8	180	9	207	11	
8-9	195	10	88	5	105	6	121	6	
9-10	166	18	<i>7</i> 5	8	89	10	103	11	
10-11	127	84	57	38	68	46	79	52	
11-12	134	134	61	61	73	73	84	84	
12-13	148	148	67	67	80	80	92	92	
13-14	123	123	56	56	66	66	76	76	
14-15	51	204	23	93	28	110	32	127	
15-16	16	303	7	137	9	163	10	188	
16-17	16	296	7	134	8	160	10	184	
17-18	26	232	12	106	14	126	16	145	

Table 3.8
Daily Trips During Peak Week - Option C

Zone:	1		6		7		8		
	New Terminal		Middle Harbor		7th Street		Outer Harbor		
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits	
TRUCKS									
7-8	248	0	117	0	140	0	161	0	
8-9	388	413	184	196	219	233	252	268	
9-10	571	699	270	331	322	394	370	453	
10-11	468	519	222	246	264	293	303	337	
11-12	589	528	279	250	332	298	382	343	
12-13	243	416	115	197	137	235	158	270	
13-14	580	412	275	195	327	232	376	267	
14-15	444	512	210	243	250	289	288	332	
15-16	318	381	151	181	179	215	206	247	
16-17	84	201	40	95	47	113	55	130	
17-18	0	42	0	20	0	24	0	27	
CARS							· · · · · · · · · · · · · · · · · · ·		
7-8	319	17	151	8	180	9	207	11	
8-9	187	10	88	5	105	6	121	6	
9-10	159	18	<i>7</i> 5	8	89	10	103	11	
10-11	121	81	57	38	68	46	79	52	
11-12	129	129	61	61	73	73	84	84	
12-13	142	142	67	67	80	80	92	92	
13-14	118	118	56	56	66	66	76	76	
14-15	49	196	23	93	28	110	32	127	
15-16	15	290	7	137	9	163	10	188	
16-17	15	284	7	134	8	160	10	184	
17-18	25	223	12	106	14	126	16	145	

Table 3.9 Daily Trips During Peak Week - Option D

Figure 3.2 illustrates the total truck trips and automobile trips for the different options.

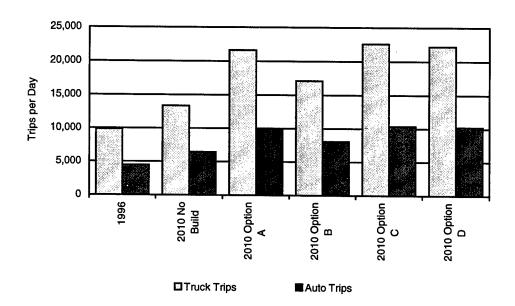


Figure 3.2
Daily Truck and Car Trips During Peak Week

Table 3.10 describes the total daily truck traffic during a peak week that moves from the zones to nearby rail yards in 2010.

7000					
Zone	1	6	7	8	
	NT	MH	7th St	OH	Total
NO-BUILD OPTION					
Total Truck Trips	0	3,760	4,473	5,150	13,383
Truck Trips to Rail Yard	0	215	256	294	765
OPTION A		***************************************	•••••••••••••••••••••••••••••••••••••••	******	***************************************
Total Truck Trips	<i>7,7</i> 15	3,908	4,648	5,352	21,623
Truck Trips to Rail Yard	2,640	1,337	1,590	1,831	7,398
OPTION B		*******************************		***************************************	
Total Truck Trips	2,898	3,817	4,540	5,865	17,120
Truck Trips to Rail Yard	490	646	768	992	2,895
OPTION C	***************************************	***************************************		***************************************	
Total Truck Trips	8,639	3,923	4,667	5,373	22,602
Truck Trips to Rail Yard	3,202	1,454	1,730	1,992	8,377
OPTION D	***************************************	***************************************			
Total Truck Trips	8,268	3,917	4,660	5,365	22,210
Truck Trips to Rail Yard	2,973	1,408	1,675	1,929	7,986

Table 3.10
2010 Daily Truck Traffic During Peak Week

Figure 3.3 illustrates the total daily truck trips and trips to the Rail Yards for each option.

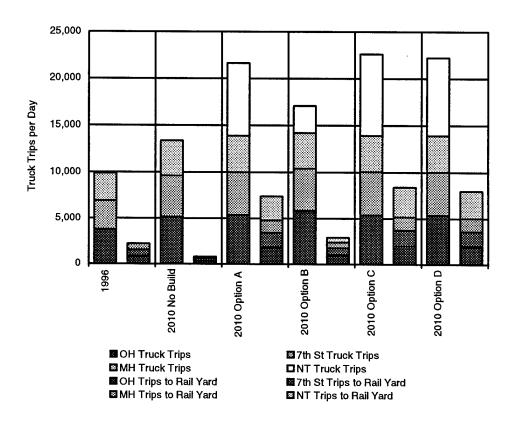


Figure 3.3
Daily Truck Trips During Peak Week

APPENDIX A: PROJECTED SHIP CALLS AT THE PORT OF OAKLAND IN 2010

JWD has estimated future ship call statistics based on data from 1988 through 1995 provided by the Port of Oakland. Statistics on lifts per call are shown in Figure A.1.

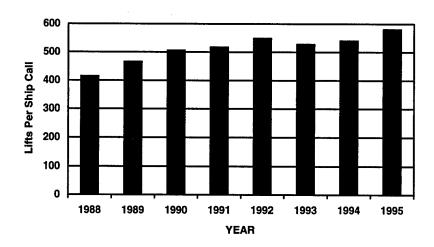


Figure A.1
Lifts per Ship Call at the Port of Oakland

The growth in lifts per ship call from 1988 to 1995 represents an annual growth rate of 4.9 %. Assuming this trend continues until 2010, the average ship call in 2010 will consist of 1196 ship lifts.

Presently, most of the container ships that call at the Port of Oakland are in the 2500 to 4000 TEUs capacity range. In general, ship sizes will increase in the future. Ships that call at Oakland may or may not increase accordingly with the world fleet as depth limitations may prohibit large ships from calling at Oakland. The largest ships in the world have a capacity of approximately 6000 TEUs and a depth requirement of about 45 feet. The channel into the Port of Oakland is presently about 40 to 42 feet deep. The Port plans to dredge the channel in order to accept larger ships. This should allow the number of ship lifts per call to continue to grow as predicted.

The ship call size of 1196 lifts was used to compute the expected number of ship calls for each of the project alternatives shown in Table A.1.

Option	Lifts per Year	Ship Calls per Year	Ship Calls per Day
1995	848,536	1,460	4.0
No Build	1,258,925	1,053	2.9
Α	1,957,211	1,637	4.5
В	1,586,582	1,327	3.6
С	2,037,782	1,704	4.7
D	2,005,554	1,678	4.6

Table A.1
Ship Calls by Project Option

Assuming each ship is worked by two dockside cranes for two shifts per day and that the dockside crane productivity remains about 24 lifts per hour as it is today, each ship will be worked for an average of 1.6 days. Ships will spend longer than this in port due to docking and tie down time as well as other miscellaneous delays. Ships will be in Port for an average of two days per call, provided the Port continues to work ships seven days per week.

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Appendix J.3 Rail Terminal Traffic Analysis

PART ONE OF RAIL TERMINAL TRAFFIC ANALYSIS

FLEET INDUSTRIAL SUPPLY CENTER OAKLAND DISPOSAL AND REUSE EIS/EIR

JOB NO. WC0337 PHASE 03

CONTENTS: PLATE 1 - SHOWING THE CAPACITY OF EACH RAIL TERMINAL EXISTING UNDER EACH ALTERNATIVE OPERATING THREE SEPARATE LEVELS OF EFFICIENCY. ALSO, THE PROJECTED EXTIMATED NUMBER OF GATE MOVES AND TRUCK TRUCK TRIPS THAT WOULD BE REQUIRED TO OPERATE EACH TERMINAL AT EACH OF THOSE LEVELS.

The assumptions made to generate the numbers are given at the bottom of the table. The assumptions are based on information obtained from existing rail terminals and model terminals that have been conceptually designed under previous studies.

November 5, 1996



PART TWO OF RAIL TERMINAL TRAFFIC ANALYSIS

FLEET INDUSTRIAL SUPPLY CENTER OAKLAND DISPOSAL AND REUSE EIS/EIR

JOB NO. WC0337 PHASE 03

CONTENTS:	Pages 1 - 3	Show the estimated type and number of trains that will be travelling over those segments of railroad shown on the diagramatic map on PLATE 11, page 4 under each alternative.
	Page 4 - PLATE 11	Shows the total number of trains in each segment for each alternative and a diagramatic map of the railroad segments.
	Page 5	Describes the rationale used in estimating the number of intermodal trains that will be generated by the existing rail terminals under each alternative at the operating level predicted by JWD and tabulated by Dowling and Assoc.
	Pages 6 - 17	Show the gate down time at the crossings in each rail segment calculated by the formula shown and based on the estimated trains shown by pages 1 - 3.

The assumptions made to estimate the numbers of trains are based on information given by the various railroads, information taken from the recent Union Pacific/ Southern Pacific merger and previous studies.

November 5, 1996



			F	PLATFI	- TRAFE	FIC ESTIMATES TO 8			
			•		TOTAL	,0 201	(1)		
ALTERNATIVE	AN	NUAL LIFTS	(CAPACITY)		ANNUAL	GATE	MOVES (CAR	PACITY)	
		(in thous	ands)		LIFTS that'da		(per day)		
	OPERATION	UP	SP	BNSF	(CAPACITY)	UP	SP	BNSF	
		(a)	(b)	(c) Richmind				(Richmor	
	CURRENT	102	. 158	24	284	431	667	101	
CURRENT		(d)	(e)	(c)					
	SUSTAINABLE	135	250	24	409	570	1,056	101	
		(d)	(e)	(0)					
	CONSTRAINED	154	300	24	478	650	1,267	101	
		(d)	(e)	(c) Richmind	3				
	SUSTAINABLE	135	250	24	409	570	1,056	101	
NO BUILD	CONCEDANCE	(d)	(e)	(C)	470		4 207	454	
(ALTE)	CONSTRAINED	154	300	24	478	650	1,267	101	
	GRIDLOCKED	(d) 194	(e) 359	(c) 24	577	819	1,516	101	
	GRIDEGERED	1,5-4	1		377	0.13	1 1,510	1 .01	
	SUSTAINABLE		(j) 1,242		1,242		5,244		
			(j)		1,2-4		J,27-		
	CONSTRAINED		1,458		1,458		6,156		
			(i)				i	,	
	GRIDLOCKED		1,782		1,782		7,524		
		(d)	(f)	(i) Port					
	SUSTAINABLE	135	252	386	773	570	1,064	1,630	
8		(d)	(f)	(1)					
	CONSTRAINED	154	276	429	859-	650	1,165	1,811	
	1	(d)	(f)	(i)					
	GRIDLOCKED	194	361	554	1,109	819	1,524	2,339	
			(☑)	(h) Port				(Port)	
	SUSTAINABLE		909	600	1,209	2	,571	2,533	
С	CONCTRAINE		(g)	(h)		_	707		
	CONSTRAINED		66C	650	1,310	2	.787	2,744	
	GRIDLOCKED		(g) 374	(h) 860	1,734	2	.690	2 624	
	H SKIDEGERED !			300	1,134		,030	3,631	
	SUSTAINABLE		(k) 1,1 56		1,156		4.881		
D	3337, 114, 121		(k)		1,155	 	7,541		
	CONSTRAINED		1,357		1,357		5.730		
			(k)		1	1	-,		
	GRIDLOCKED		1,658		1,658		7,000		

- (a) Very recent figure obtained from UP.
- (b) Very recent figure obtained from SP
- (c) 15% of total 160,000 lifts recently obtained from BN/SF (15% attributable to Port of Oakland).
- (d) Joint Intermodal Teriminal (JIT) Operational Analysis Report, page 39.
- (e) JIT Operational Analysis Report, page 42 (adjusted for lift demand Alt E).
- (f) Preliminary Draft, Proposed Expanded Southern Pacific Intermodal Terminal Version 3.
- (g) Preliminary Draft, Proposed Expanded Southern Pacific Intermodal Terminal Version 2.
- (h) JIT Operating Plan Report, page 57 (based on track under crane).
- (i) JIT Operating Plan Report, page 57 (reducing track under crane by tracks #6 and #7, lost to support tracks). Note: It is assumed that under Alternate B the rail terminal facilities would expand capacity in accordance with the demand for lifts, and there would be close to a 50/50 split betweem UP (merged) and BNSF.
- (j) JIT Operating Plan Report, page 2 of Appendix A.

MATES	TO & F	ROM IN	TERMO	DAL FA	CILITIES	(RR)				
(1)		TOTAL		(m)		TCTAL		- (n)		TOTAL
OVES (CAP	ACITY)	D'LY GATE	DAI	LY TRUCK TE	RIPS	DAILY		JOBS ON SITE		RAIL
(per day)		MOVES	Bas	ed on Gate Mi	oves	TRUCK	Base	d on Lifts (Capa	acity)	TERMINAL
SP	BNSF	(CAPACITY)	UP	SP	BNSF	TRIPS	UP	SP	BNSF	JOBS
	(Richmond)				(Richmond)					
867	101	1,199	689	1,067	162	1,919	55	72	N/A	127
1,056	101	1,727	912	1,689	162	2,763	67	107	N/A	174
1,267	101	2,018	1,046	2,027	162	3,229	70	123	N/A	193
	I				(Richmond)					
1,056	101	1,727	912	1,689	162	2,763	67	107	N/A	174
1,267	101	2,018	1,040	2,027	162	3,229	70	123	N/A	193
1,516	101	2,436	1,311	2,425	162	3,898	82	130	N/A	212
5,244		5,244		8,390		8,390		350		350
6,156		6,156		9, 85 0		9,850		400		456
-										
7,524		7,524		12,038		12,038	427		427	
					(Port)					
1,064	1,630	3,264	912	1,702	2,608	5,222	67	150	167	384
								ļ		
1,165	1,811	3,627	1,040	1,865	2,898	5,803	7G	167	178	415
·										
1,524	2,339	4,682	1,311	2,439	3,743	7,492	82	183	204	469
	(Port)				(Port)				1	
71	2,533	5,105	4.	114	4,053	8,167	- 3	210	208	418
87	2,744	5.531	4	459	4,391	8.850		222	220	442
·										
90	3,631	7,321	5	904	5,810	11,714		256	254	510
4,881		4,881		7,809		7,909	ļ	343		343
5,730		5.730		9,167		9,167	 	375		375
_						#				
7,000		7,000		11,201		11.201	1	418		418

- (k) JIT Operating Plan Report, page 2 of Appendix A (proportioned by track under crane).
- (I) Average daily gate moves calculated by dividing annual lifts by 380 days and multifolying by 1.52 gate moves/lift.
- (m) The number of daily truck trips is 1.6 times the Gate Moves, a factor thought to be conservatively high. Note: At rail terminals, moves through the gates involving empty chassis are counted as gate moves.
- (n) The number of employees are taken from known and modeled facilities, the jobs on site under gridlocked conditions are 1.43 times the number required for sustainable conditions minus 15% assumed constant (supervisors etc). Notes:
- A. Under "Annual Lifts" three levels of operation are referred to by the table: 1. Sustainable is near comfortable capacity wherein lift costs are minimized, 2. Constrained is beyond the comfortable capacity of the intrastructure and a premium is paid in cost per lift.

 3. Gridlocked is operating at maximum capacity with maximum effort.
- B. Gate Moves = Gate Transactions. They do not include truck tractors without chassis' or trailers (Bobtails).
- C. The table on page 2, shows comparison between lift capacities and demand (projected number of Int'l., domestic, & trailers.)

				4
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	·			
				1
			·	1
				1
		•		
				١
				•

ALTERNATIVE: CURRENT (POST-MERGER) (BELOW SUSTAINABLE)

							TRAIN	TRAIN TYPE							
Seament		EASTBOU	EASTBOUND (AWAY	FROM 7TH STREET)	7TH S	TREET			WESTB(WESTBOUND (TOWARDS 7TH STREET)	JWARD	S 7TH	STREET)		TOTAL
)	1200	009	0009	1	6000 6000 1200	1200	300	1200	009	0009	0009 0009	0009	1200	300	DAILY
	PASS	PASS	BNSF-IM	TF-M	Σ	COC	SW	PASS	PASS	PASS BNSF-IM TF-M	TF-M	⅀	TOC	SW	TRAINS
 	2	8		4	2		·	2	8		3	3			32
В	2	8		4	2	**2	2	2	8		3	3	**2	2	40
ပ	2	8					2	2	8					2	24
0	*5	*13					2	£2	*13					2	40
	*5	*13		2		2		4.5	*13		2		2		44
	1	3		2		2		1	3		2		2		16
	INCTO!	DES DEAD	INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF	NGER TR	AIN MO	/EMENT	S BETWE	EN JLS A	ND PEMF		TF-M -	THRU	TF-M - THRU FREIGHT, MANIFEST	, MANIF	EST
	** BNSF	** BNSF TRAINS									M - M	TERMO	IM - INTERMODAL TRAIN	Z	
	PASS.	- PASSEN	PASS - PASSENGER TRAI	Z							1-007	OCAL	LOC - LOCAL FREIGHT TRAIN	TRAIN	
	BNSF-	IM - BURL	BNSF-IM - BURLINGTON N	JORTHE	ERN SA	NTAF	EINTEF	NORTHERN SANTA FE INTERMODAL TRAIN	TRAIN		SW - S	WITCH	SW - SWITCHER TRAIN	-	

ALTERNATIVE:NO BUILD (GRIDLOCKED)

	TOTAL	DAILY	TRAINS	42	47	26	42	48	20
		300	SW		1	1	1		
	STREET)	1200	COC		**2			2	2
	S 7YH	0009	Σ	***5	5				
	WARD	0009 0009	TF-M	5	4			2	2
	WESTBOUND (TOWARDS 7YH STREET)	0009	PASS PASS BNSF-IM TF-M						
	WESTB	009	PASS	10	10	10	*15	*15	5
TRAIN TYPE		1200	PASS	2	2	2	* 5	*5	1
TRAIN		300	SW		-	1	_		
	TREET	1200	TOC		**2			2	2
	7TH S	0009	Σ	***	4				
	FROM	0009	TF-M	4	4			2	2
	ND (AWAY	600 6000 6000 6000 1200	BNSF-IM						
	ASTBOU	009	PASS BNSF-IN	10	10	10	*15	*15	5
	Ш	1200	PASS	2	2	2	\$	*	-
	Segment)		A	В	U		ш	L

^{*} INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

^{**} BNSF TRAINS (NO CHANGE FROM CURRENT POST-MERGER CONDITIONS)

^{***} CORRESPONDS TO THE 9 INTERMODAL TRAINS/DAY PER TRAIN ANALYSIS AND ASSUMPTIONS

ALTERNATIVE: A (SUSTAINABLE)

	LOTAI	\ \ \ \	TRAINS	200	3 2	5	26	43	٢	3 9	-54
		Τ-	NS:	╁	+	-	_	6	1		-
	TREET)	1200	00		***	-			0	10	j
	S TTH S	0009	Σ	22	7.	,					_
	WARD	0009		4	4	•			2	2	ī
	WESTBOUND (TOWARDS 7TH STREET)	0009	PASS BNSF-IM TF-M	7***	7***						
	WESTBC	009	PASS	10	10	1	10	*15	*15	2	
TRAIN TYPE		1200	PASS	2	2	C	7	*5	*5	F	1
TRAIN	(EET)	300	SW		1.	1	=	1			
	AY FROM 7TH STREET)	1200	707		**				2	2	1
	Z MO	0009	≧	2	5						
	NAY FR	0009	TF-M	7	4				2	2	
	EASTBOUND (AW	0009	BNSF-IM	***	***		,			-	
	EASTB	009	PASS BNSF-IM	10	10	5	2	*15	*15	5	
		1200	PASS	2	2	c	7	*2	\$	1	
	Segment			A	В	ر	,	D	E	F	

* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

** BNSF TRAINS

*** ASSUMES BNSF HAS 40% TO 50% OF THE INTERMODAL TRAIN TRAFFIC PASS - PASSENGER TRAIN

BNSF-IM - BURLINGTON NORTHERN SANTA FE INTERMODAL TRAIN

TF-M - THRU FREIGHT, MANIFEST LOC - LOCAL FREIGHT TRAIN IM - INTERMODAL TRAIN SW - SWITCHER TRAIN

ALTERNATIVE: B (SUSTAINABLE)

	TOTAL	\ \ \ \	·	+	1	- +	07	1 42	ΨV.	P	707
		300) No.								
	STREET	1200	0	1	**	-			2	1 0	7
	S 7TH	0009	2	۳.) m						
	DWARD	0009 0009	TF-M	4	4				2	10	7
	WESTBOUND (TOWARDS 7TH STREET)	9009	PASS BNSF-IM TF-M	3	3						
	WESTB		PASS	10	10	5	2 !	.15	*15	5	5
TRAIN TYPE		1200	PASS	2	2	C	1 1	Ç,	S *	+	•
TRAIN	-		SW		-	-	T				
	STREE	6000 1200	LOC		1**				7	2	
	M 7TH	0009	Σ	3	3						
	AY FROM 7TH STREET	0009	TF-M	4	4				2	2	
	JND (AW/	0009	BNSF-IM	3	3						
	EASTBOUND (AW	009	PASS BNSF-IM	10	10	10	*15	2	*15	5	
		1200	PASS	2	2	2	*	2	\$	1	
	Segment			А	В	ပ	 C	ار	Ш	ш	

* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

** BNSF TRAINS

ALTERNATIVE: C (CONSTRAINED)

WESTBOUND (TOWARDS 7TH STRE 600 6000 120 600 6000 120 10 5 4 5 10 5 4 5 10 5 4 5 10 5 2 *15 2 *15 2 AND PEMF TF-M - THRU FREIG IM - INTERMODAL 1 LOC - LOCAL FREIG 1M - INTERMODAL 1 SW - SWITCHER TF			-					TRAIN	FRAIN TYPE							
EASTBOUND (AWAY FROM 7TH STREET) WESTBOUND (IND (IND (IND III)) 1200 600 6000 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>- 1</td><td>- 11</td><td>O.L.</td><td>77, 41, 41,</td><td>00000</td><td>77.10</td><td>TOCCT</td><td></td><td>TOTAL</td></t<>								- 1	- 11	O.L.	77, 41, 41,	00000	77.10	TOCCT		TOTAL
1200 600 6000	Seamont		=ASTBOL	JND (AWA)	`	I TH S	TREET	_		WESIBO	JUND (IC	WARD	L	SI REE I		2
TF-M IM LOC SW PASS PASS BNSF-IM 4 4 4 **1		4000	800	8000	9009	6000	1200	300	1200		0009	0009	0009	1200	300	DAILY
4 4 ***1		2007		DAICE IN	THE M	2	C	N.	PASS	PASS	BNSF-IM	TF-M		207	SW	TRAINS
4 4 4 **1 · 1 2 10 5 4 4 4 **1 · 1 2 10 5 2 2 2 *15 2 2 2 *15 NGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF N V VORTHERN SANTA FE INTERMODAL TRAIN		PASS		DIVOL-IIVI	M M-		3	;			L	Ī				ř.
4 4 **1		,	10	5	4	4			2	5	ဌ	4	<u>ہ</u>			5
2 2 *15 NGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF N ORTHERN SANTA FE INTERMODAL TRAIN		1	5	2	A	4	***	7.	2	9	5	4	ည	**	Ψ-	22
2 2 *15 *15 *15 *15 *15 *15 *15 *15 *15 *15	מ	7	2	2			1	T	C	4					-	96
1 *5 *15 1 15 15 15 15 15	C	2	10	_				-	7	2						2 3
2 *5 *15 *15 NGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF NORTHERN SANTA FE INTERMODAL TRAIN		*							4.5	*15					_	42
2 2 15 15 15 15 15 15 15 15 15 15 15 15 15	ا د	٥,	-				1		1	7,7		c		6		AR
2 1 5 1 5 NGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF N N NORTHERN SANTA FE INTERMODAL TRAIN	u	*5			2		7		Ç.	CL.		7		7		2
NGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF N N N NORTHERN SANTA FE INTERMODAL TRAIN	L	1			ľ		C		+	ų		6		2		20
NGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF N JORTHERN SANTA FE INTERMODAL TRAIN	ш	_	4)	-	7		7			2		4				
N JORTHERN SANTA FE INTERMODAL TRAIN			יים ספט	HEAD PASSE	NGFR TE	AIN MO	/EMENT	S BETWE	EN JLS A	ND PEMF		TF-M -	THRU	REIGHT	, MAN	ESI
N JORTHERN SANTA FE INTERMODAL TRAIN		INCLO	טבט טבטט	יייייייייייייייייייייייייייייייייייייי	i i							IM - MI	FERMO	DAI TRA	2	
N JORTHERN SANTA FE INTERMODAL TRAIN		** BNSF	TRAINS)	:		
JORTHERN SANTA FE INTERMODAL TRAIN			ALIONAL	AGT GOOL	12							7-007	OCAL	FREIGHT	TTRAIN	
DIAST - IIII - DOIXEING - OX - OX - OX - OX - OX - OX - OX - O		PASS		INGTON	SORTH	ERN SA	NTA FI	IINTEF	RMODAL	TRAIN		SW-S	WITCH	ER TRAIL	7	
		5	SO - IMI													

ALTERNATIVE: D (CONSTRAINED)

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	FASTRO	FASTROIND (AWA)	AY FROM 7TH STREET	17TH S	TREET			WESTB (WESTBOUND (TOWARDS 7TH STREET)	OWARD	S 7TH	STREET)		IOIAL IOIAL
1200	900	0009	0009	6000 1200	1200	300	1200		0009	0009 0009	0009	1200	300	DAILY
0070		PASS BNSF-IM	TF-M	≥	207		PASS	PASS	PASS BNSF-IM TF-M	TF-M	Σ	LOC	SW	TRAINS
2	_1_	V***		5		П	2	9	***	4	9			51
	7 0	V***	_	יי	***	\\ \\ \	0	10	7 ***	4	9	F**	1	22
	7	†		?		1	1 6	1					1	26
_	7	0				-	7						ľ	72
	*5 *15	5				=	*	*15					-	74
	*15	22	2		2		*5	*15		2		2		48
-		2	2		2		٢	2		2		2		20

^{*} INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

^{***} BNSF TRAINS

^{***} ASSUMES BNSF HAS 40% TO 50% OF THE INTERMODAL TRAIN TRAFFIC

Page 4

TRAIN ANALYSIS AND ASSUMPTIONS

A typical 6000 ft. train is assumed to carry an average of 8.75 trailers and 166.25 containers (175 vans). The trailers are most commonly carried on 89 ft. flatcars and a space utilization of approximately 80% is assumed. The containers are most commonly carried on doublestack platforms 61 ft. in length. A slot utilization factor of 1.83 containers per platform is used here because the Union Pacific used this factor for projecting numbers of intermodal trains in their recent merger application.

A rail terminal with a lift capacity of 100,000 annual lifts would require the following average number of trains per day.

100,000 divided by

360 days

divided by

175 equals

1.587302 trains/day

Using this model, the relative number of trains required for each of the rail terminals at the projected level of operation under each alternative follow:

Alternative	Facility	Lifts in	Function	Multiplier	Function	Ave. Daily Trains
		Thousands				
Current	UP	1.02	times	1.59	equals	1.62 trains/day
(Existing)	SP	1.58	times	1.59	equals	2.51 trains/day
	Richmond	0.24	tmes	1.59	equals	0.38 trains/day
	Merged UP					4.13 trains/day
	Total					4.51 trains/day
No Build						
Gridlock	UP	1.94	times	1.59	equals	3.08 trains/day
	SP	3.59	times	1.59	equals	5.70 trains/day
	Richmond	0.24	tmes	1.59	equals	0.38 trains/day
	Merged UP					8.78 trains/day
	Total					9.16 trains/day
Alt A				1		
Sust'n'ble	JIT	11.40	times	1.59	equals	18.09 trains/day
Alt B			<u> </u>	1		
Sust'n'ble	UP	1.05	times	1.59	equals	1.67 trains/day
	SP	⁻ 3.12	times	1.59		4.96 trains/day
	BNSFport	3.51	ļ ·	1.59	equals	5.57 trains/day
	Merged UP					6.63 trains/day
	Total					12.21 trains/day
Alt C						
Constr'nd	Merged UP	6.05	times	1.59	equals	9.61 trains/day
	BNSFport	6.14	tmes	1.59	equals	9.75 trains/day
	Total					19.36 trains/day
Alt D						
Constr'nd	JIT	11.89	times	1.59	equals	18.87 trains/day

See "Traffic Estimates To & From Intermodal Facilities (RR)" for levels of operation, pg.1, Part 1.

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	+(1200/(1.47 [*]	'45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

60-60		60-	60-60		15-15		60-40	
	A	В		E		F		
2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73	
8-600	4.91	8-600	4.91	13-600	12.40	3-600	1.67	
4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40	
2-6000	3.27	2-6000	3.27	2-1200	2.81	2-1200	1.68	
		2-1200	1.45					
		2-300	1.11					
	16.16		18.73		32.32		8.48	
Cuttin	g Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	Avenues	
		45-45				40	-20	
		В						
		2-1200	1.60			1-1200	0.84	
*	•	8-600	5.21			3-600	2.01	
		4-6000	8.05			2-6000	7.80	
		2-6000	4.02			2-1200	2.36	
		2-1200	1.60					
		2-300	1.15					
			21.64				13.01	
		67th,66th	,65th St.'s			5th A	venue	
	2-1200 8-600 4-6000 2-6000	8-600 4.91 4-6000 6.54 2-6000 3.27 16.16 Cutting Blvd.	A 1.45 2-1200 8-600 4.91 8-600 4-6000 2-6000 2-1200 8-600 4-6000 2-1200 2-300 8-600 4-6000 2-1200 2-300 8-600 4-6000 2-1200 2-300 8-600 4-6000 2-1200 2-300	A B 2-1200	A B 1.45 2-1200 1.45 5-1200 8-600 4.91 8-600 4.91 8-600 6.54 2-6000 2-6000 3.27 2-1200 1.45 2-300 1.11	A B E	A B E F F	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	-(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30		1.47	20	50.41	0.84
30	1	1.47	20	40.20	0.67
30		1.47	15	302.11	5.04
30		1.47	15	84.42	1.41
30	i	1.47	15	57.21	0.95
30	Į.		15	43.61	

Speed	60	-60	60-	60		-15	60-	40	
Segment		A	E	В		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200		1-1200	0.73	
Current	8-600	4.91	8-600	4.91	13-600		3-600	1.67	
Westb'nd	3-6000	4.90	3-6000	4.90	2-6000	i	2-6000	4.40	
ļ	3-6000	4.90	3-6000	4.90	2-1200	2.81	2-1200	1.68	
		,	2-1200	1.45				l l	
			2-300	1.11					
Sub-Total		16.16		18.73		32.32	li	8.48	
		Cutting Blvd.		Bancroft	Market-Oak		29th-37th Avenues		
Speed	Speed			45-45			40	-20	
Segment				3				=	
. 10 ± 1 × 21			2-1200	1.60			1-1200	0.84	
	. •.	\$ "	8-600	5.21			3-600	2.01	
			3-6000	6.04			2-6000	7.80	
			3-6000	6.04			2-1200	2.36	
			2-1200	1.60					
			2-300	1.15					
Sub-Total	67	th,66th,65th	St's.	21.64		5th Avenu	9	13.01	
Totals		ng Blvd.	Gilman	Gilman-Bancroft		et-Oak	29th-37tl	n Avenues	
i	East & West 32.33			37.46	3	64.63		16.96	
1	From all Trains			67th,66th,65th St's.			5th A	venue	
in Minute				43.28	3			26.03	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Г	Constant	I am adh	A			51110
1	Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
-		ie. T=30-		'45))=48 seconds or 0.	8 minutes	
ļ	30	6000	1.47	60	98.03	1.63
	30	1200	1.47	60	43.61	0.73
	30	600	1.47	60	36.80	0.61
L	30	300	1.47	60	33.40	0.56
	30	6000	1.47	45	120.70	2.01
	30	1200	1.47	45	48.14	0.80
l	30	600	1.47	45	39.07	0.65
L	30	300	1.47	45	34.54	0.58
l	30	6000	1.47	40	132.04	2.20
	30	1200	1.47	40	50.41	0.84
	30	600	1.47	40	40.20	0.67
L	30	300	1.47	40	35.10	0.59
	30	6000	1.47	20	234.08	3.90
l	30	1200	1.47	20	70.82	1.18
	30	600	1.47	20	50.41	0.84
L	30	300	1.47	20	40.20	0.67
	30	6000	1.47	15	302.11	5.04
	30	1200	1.47	15	84.42	1.41
	30	600	1.47	15	57.21	0.95
	30	300	1.47	15	43.61	0.73
			OATED			

0	Crosd Co. 00					iger trains- the second for freight trains.			
Speed	60)-60	60)-60	15	-15	60	-40	
Segment		A		В	E		F		
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	I	
No Build	10-600	6.13	10-600		15-600	l .	5-600	2.78	
Eastb'nd	4-6000	6.54	4-6000	1	2-6000		2-6000	4.40	
	4-6000	6.54	4-6000		2-1200		2-1200	1.68	
			2-1200	1.45	1	2.01	1200	1.00	
			1-300	0.56					
Sub-Total		20.66		22.67		34.22		8.87	
	Cuttin	g Blvd.	Gilman-	Bancroft	Marke	t-Oak	l	Avenues	
Speed			45	-45				-20	
Segment				В		······································		=	
			2-1200	1.60	····		1-1200	0.84	
1.77			10-600	6.51	. A.		5-600	3.35	
			4-6000	8.05			2-6000	0.73	
			4-6000	8.05			2-1200	2.36	
ļ		:	2-1200	1.60				2.00	
			1-300	0.58					
Sub-Total				26.39				7.28	
			67th,66th,65th St.'s				5th Av	venue	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
			(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

in Minutes				52.78				21.63
From all Trains			67th,66th,65th St's.				5th A	venue
East & West 41.32		45.34		68.44444		11		
Totals	Totals Cutting Blvd.		Gilman-	Bancroft	Market-Oak		29th-37th Avenues	
Sub-Total	67t	h,66th,65th	St.'s	26.39		5th Avenue)	14.35
			1-300	0.58				
			2-1200	1.60				
			4-6000	8.05			2-1200	2.36
			4-6000	8.05			2-6000	7.80
P		2 - 1 - 1	10-600	6.51			5-600	3.35
			2-1200	1.60			1-1200	0.84
Segment			В					F
Speed			45-45				40	-20
	Cuttin	g Blvd.	Gilman-Bancroft		Marke	et-Oak	1	n Avenues
Sub-Total		20.66		22.67		34.22		9.59
			1-300	0.56		:		
			2-1200	1.45				
	4-6000		4-6000	l .	2-1200	l.	2-1200	1.68
	4-6000		4-6000	l .	2-6000		2-6000	4.40
No Build	10-600		10-600	ľ	15-600	4	5-600	2.78
	2-1200	1.45	2-1200	1.45	5-1200		1-1200	0.73
Segment		A		3				F
Speed				-60	15-15		60-40	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MDU	Speed MPH Time SEC		
GO. JORGI II			Speed MPH	Time SEC	Time MIN	
			'45))=48 seconds or 0.	8 minutes		
30	6000	1.47	60	98.03	1.63	
30	1200	1.47	60	43.61	0.73	
30	600	1.47	60	36.80	0.61	
30	300	1.47	60	33.40	0.56	
30	6000	1.47	45	120.70	2.01	
30	1200	1.47	45	48.14	0.80	
30	600	1.47	45	39.07	0.65	
30	300	1.47	45	34.54	0.58	
30	6000	1.47	40	132.04	2.20	
30	1200	1.47	40	50.41	0.84	
30	600	1.47	40	40.20	0.67	
30	300	1.47	40	35.10	0.59	
30	6000	1.47	20	234.08	3.90	
30	1200	1.47	20	70.82	1.18	
30	600	1.47	20	50.41	0.84	
30	300	1.47	20	40.20	0.67	
30	6000	1.47	15	302.11	5.04	
30	1200	1.47	15	84.42	1.41	
30	600	1.47	15	57.21	0.95	
30	300	1.47	15	43.61	0.73	

Speed	60	0-60)-60		-15		
Segment		A		В	E		60-40 F	
Alt. & Dir.	2-1200	1.45	2-1200		5-1200		1-1200	0.73
Alt "A"	10-600	1	10-600	1	15-600	ı	5-600	2.78
Eastb'nd	4-6000	6.54	4-6000	1	2-6000		2-6000	4.40
	4-6000	6.54	4-6000	4	2-1200		2-1200	1.68
	5-6000	8.17	5-6000	8.17				1.00
			1-1200	0.73				
			1-300	0.56				
Sub-Total		28.83		30.11		34.22		9.59
	Cuttin	g Blvd.	Gilman-	Bancroft	Marke	t-Oak	29th-37th	Avenues
Speed			45	-45				-20
Segment			В				F	
10.30	end for the gard		2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			5-6000	10.06				
			1-1200	0.80				
			1-300	0.58				
Sub-Total			**	35.65				14.35
	·-· -	•	67th,66th	,65th St.'s			5th A	venue

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	+(1200/(1.47 *	'45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Speed	60)-60	60-	-60	15	-15	60-40	
Segment		Α		3	E			F
	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "A"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Westb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
1	5-6000	8.17	5-6000	8.17				
1			1-1200	0.73				
			1-300	0.56				
Sub-Total		28.83		30.11		34.22		9.59
	Cuttin	ig Blvd.	Gilman-	Bancroft	roft Market-Oak		29th-37th	Avenues
Speed			45	-45			40	-20
Segment	1.1.45		[3		1. 4		=
12/12/15		e e e	2-1200 "	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	2.36
1			5-6000	10.06				
1			1-1200	0.80				
•			1-300	0.58				
Sub-Total	67th,66th,65th St		St.'s	35.65 5th Avenue		<u> </u>	14.35	
Totals	Cutting	57.65	Gil-Ban	60.22	Mark-Oak	68.44	29th-37th	19.18
E and W	67t	h,66th,65th	St's.	71.29		5th Avenue		28.71

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	+(1200/(1.47 [*]	(45))=48 seconds or 0.5	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Speed	60	-60	60	-60	15	-15	60	-40
Segment	Α			3		E F		F
	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "B"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Eastb'nd	3-6000	4.90	3-6000	4.90	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	3-6000	4.90	3-6000	4.90				
			1-1200	0.73				
			1-300	0.56				
Sub-Total		23.93		25.21		34.22		9.59
	Cuttin	g Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	n Avenues
Speed			45	-45			40	-20
Segment				3				F .
	Tarrier - 1 E	ź	2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			3-6000	6.04			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			3-6000	6.04				1
			1-1200	0.80				
			1-300	0.58				
Sub-Total				29.61				14.35
			67th,66th	,65th St.'s			5th A	venue

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
,	ie. T=30+	-(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	1	1.47	15	57.21	0.95
30	1	1.47	15	43.61	0.73

Speed	60	-60	60-	60	15-	15	60-	40
Segment		A	E	3	E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "B"	10-600	6.13	10-600	6.13	15-600		5-600	2.78
Westb'nd	3-6000	4.90	3-6000	4.90	2-6000		2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	3-6000	4.90	3-6000	4.90				
			1-1200	0.73				
1			1-300	0.56				
Sub-Total		23.93		25.21		34.22		9.59
	Cuttir	g Blvd.	Gilman-	Bancroft	Marke	t-Oak	29th-37th	Avenues
Speed	<u> </u>		45	-45			40-	-20
Segment			·	В			F	
7 7 7 7			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			3-6000	6.04			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			3-6000	6.04				
			1-1200	0.80				
1			1-300	0.58	3			
Sub-Total	67	th,66th,65th	St.'s	29.61		5th Avenue	e	14.35
Totals	Cutting	47.85	Gil-Banc	50.42	Mark-Oak	68.44444	29th-37th	19.18
E&W		th,66th,65th	St's.	59.22	2	5th Avenu	е	28.71

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	+(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Speed	60	0-60		60-60	15	-15	60	-40
Segment		Α		В		E		F
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "C"	10-600	6.13	10-600	6.13	15-600		5-600	2.78
Eastb'nd	5-6000	8.17	5-6000	8.17	2-6000		2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200		2-1200	1.68
	4-6000	6.54	4-6000	6.54				
			1-1200	0.73				
			1-300	0.56				
Sub-Total		28.83		30.11		34.22		9.59
	Cuttin	g Blvd.	Gilma	an-Bancroft	Marke	et-Oak		Avenues
Speed				45-45				-20
Segment				В				=
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			5-6000	10.06			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			4-6000	8.05				
			1-1200	0.80				
			1-300	0.58				
Sub-Total				35.65				14.35
			67th,66	Sth,65th St.'s			5th Av	venue
		L						

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30+	-(1200/(1.47*	(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Speed	60	-60	60-	·60	15-	·15	60-	-40
Segment		A	E		E			=
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200		1-1200	0.73
Alt "C"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Westb'nd	5-6000	8.17	5-6000	8.17	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
1	5-6000	8.17	5-6000	8.17				
			1-1200	0.73				
•			1-300	0.56				
Sub-Total		30.46		31.74		34.22		9.59
	Cuttir	ng Blvd.	Gilman-	Bancroft	Marke	et-Oak	29th-37th	Avenues
Speed			45	-45			40	-20
Segment				В				F
			2-1200	1.60			1-1200	0.84
-			10-600	6.51			5-600	3.35
			5-6000	10.06			2-6000	7.80
			4-6000	8.05			2-1200	2.36
ļ			5-6000	10.06				
			1-1200	0.80	1			
1			1-300	0.58				
Sub-Total	67	th,66th,65th	St.'s	37.66		5th Avenue	9	14.35
Totals	Cutting	59.29	Gil-Banc	61.85	Mark-Oak	68.44444	29th-37th	19.18
E&W	67th,66t	h,65th St's.		73.30		5th Avenu	9	28.71

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
	ie. T=30-	+(1200/(1.47 ⁴	45))=48 seconds or 0.	8 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

Note: The first number is the limit speed	t for passenger t	rains- the second	for freight trains
		410 0000114	ioi ireignit trains.

Speed	60)-60	60-	-60	15-15		60-40		
Segment		A		3	Ε			F	
	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73	
Alt "D"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78	
Eastb'nd	4-6000	6.54	4-6000	6.54	2-6000		2-6000	4.40	
	4-6000	6.54	4-6000	6.54	2-1200	1	2-1200	1.68	
	5-6000	8.17	5-6000	8.17		!			
			1-1200	0.73					
			1-300	0.56					
Sub-Total		28.83		30.11		34.22		9.59	
	Cuttin	g Blvd.	Gilman-l	Bancroft	Marke	et-Oak	29th-37th	Avenues	
Speed			45-	45			40-	-20	
Segment			Ē	3			**	=	
	12.7		2-1200	1.60			1-1200	0.84	
		:	10-600	6.51			5-600	3.35	
			4-6000	8.05			2-6000	7.80	
			4-6000	8.05			2-1200	2.36	
			5-6000	10.06					
1			1-1200	0.80					
			1-300	0.58					
Sub-Total				35.65				14.35	
			67th,66th,	65th St.'s			5th Av		
		£	···		I	L	<u> </u>		

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
			(45))=48 seconds or 0.8	3 minutes	
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

		number is the	mini speed	i lor passen	ger trains- t	ne secona i	or treignt tra	ains.	
Speed	6	0-60	60	-60	15	-15	60	-40	
Segment		Α		В		=			
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0).73
Alt "D"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2	2.78
Westb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4	.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1	.68
	6-6000	9.80	6-6000	9.80					
			1-1200	0.73					
			1-300	0.56					
Sub-Total		30.46		31.74		34.22		9	.59
	Cutti	ng Blvd.	Gilman-	-Bancroft	Marke	et-Oak	29th-37th	Avenue	es
Speed			- 45	-45		***************************************	40	-20	
Segment				В				F	
			2-1200	1.60			1-1200	0	.84
		,	10-600	6.51			5-600	3	3.35
		,	4-6000	8.05			2-6000	7	'.80
	•		4-6000	8.05			2-1200	2	2.36
			6-6000	12.07					
			1-1200	0.80					
			1-300	0.58					
Sub-Total	67	th,66th,65th S	St.'s	37.66		5th Avenue		14	.35
Totals	Cutting	59.29	Gil-Banc	61.85	Mark-Oak	68.44	29th-37th	19	.18
E&W	67th,66	th,65th St's.		73.30		5th Avenue)	28	3.71

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Appendix J.4
Marine and Rail Traffic Background Data and Assumptions

Table J.4-1 FISCO/Port Vision 2000 EIS/EIR Marine / Rail Traffic Assumptions

Marine Container Distribution

Type of Trip Project Alter				Project Alternative		
'', '', '', '', '', '', '', '', '', ''	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
To / From Rail	20%	5%	31.1%	15.0%	33.8%	32.8%
Over-the-road	80%	95%	68.9%	85.0%	66.2%	67.2%

Marine / Rail Factors

Parameter	Assum	ptions	
	Marine	Rail	Comment
TEUs / Container	1.75		,
1996/1995 Growth	107%		
TEUs / Acre / Year			
1995	3,168		
1996	3,390		
2010	4,700		
Weeks per year	52	52	
Days per week	5	7	
Peak Week / Average Week	1.25	1.19	
Peak Weekday/Avg. Day of Wee	1	1.33	Rail peak factor accounts for slow weekends.
Gate Moves / Lift	1.33	1.52	
Truck Trips / Gate Move - Total	Varies	1.6	
Over-the-Road	1.65		
Marine - Rail	1.9		

Table J.4-2 FISCO/Port Vision 2000 EIS/EIR Rail Background Data

Peak / Average Activity Factor Based on 2010 Train Arrival and Departures (1)

	<u>Total</u>
Peak	32
Average	27
Factor	1.19

Peak Day / Average Day Factor Calculation Based On Rail Terminal Gate Transactions (2)

Day	Railroad		<u>Total</u>
	SP	<u>UP</u>	
Mon	950	800	1,750
Tue	950	970	1,920
Wed	950	900	1,850
Thu	950	800	1,750
Fri	950	500	. 1,450
Sat	250	700	950
Sun	<u>200</u>	<u>250</u>	<u>450</u>
Total	5,200	4,920	10,120
Average	743	703	1,446
Maximum	<u>950</u>	<u>970</u>	<u>1,920</u>
Factor	1.28	1.38	1.33

⁽¹⁾ Provided by Nolte and Associates.

⁽²⁾ Joint Intermodal Terminal Operating Plan, Summit/Lynch consulting Engineers, et. al., Feb. 1995.

Table J.4-3 FISCO/Port Vision 2000 EIS/EIR Marine Traffic

Marine Terminal Acres

Zone / Terminal		Project Alternative								
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill				
1 New Harbor	0.0	0.0	260.0	100.0	290.0	278.0				
6 Middle Harbor	131.7	131.7	131.7	131.7	131.7	131.7				
7 7th St. Harbor	156.7	156.7	156.7	156.7	156.7	156.7				
8 Outer Harbor	180.4	180.4	180.4	202.4	180.4	180.4				
Total	468.7	468.7	728.7	590.7	758.7	746.7				

Annual Lifts (Containers)

Zone / Terminal	Project Alternative							
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill		
1 New Harbor	0	0	698,286	268,571	778,857	746,629		
6 Middle Harbor	255,109	353,709	353,709	353,709	353,709	353,709		
7 7th St. Harbor	303,458	420,744	420,744	420,744	420,744	420,744		
8 Outer Harbor	349,366	484,395	. 484,395	543,535	484,395	484,395		
Total (rounded)	907,934	1,258,848	1,957,134	1,586,559	2,037,705	2,005,477		

Weekday Truck Trips - Over-the-Road

Zone / Terminal						
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	5,076	2,409	5,440	5,294
6 Middle Harbor	2,153	3,545	2,571	3,172	2,470	2,508
7 7th St. Harbor	2,561	4,217	3,059	3,773	2,939	2,983
8 Outer Harbor	2,949	4,855	3,521	4,874	3,383	3,434
Total	7,663	12,617	14,227	14,228	14,232	14,219

Weekday Truck Trips - To and From Rail

Zone / Terminal		Project Alternative									
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill					
1 New Harbor	0	0	2,638	489	3,198	2,975					
6 Middle Harbor	620	215	1,336	645	1,452	1,409					
7 7th St. Harbor	737	256	1,590	767	1,728	1,677					
8 Outer Harbor	849	294	1,830	991	1,989	1,930					
Total	2,206	765	7,395	2,891	8,368	7,992					

Weekday Truck Trips - Total

Zone / Terminal		Project Alternative									
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill					
1 New Harbor	0	0	7,714	2,898	8,638	8,269					
6 Middle Harbor	2,773	3,760	3,908	3,817	3,923	3,917					
7 7th St. Harbor	3,299	4,473	4,648	4,540	4,666	4,660					
8 Outer Harbor	3,798	5,149	5,351	5,865	5,372	5,365					
Total	9,869	13,382	21,622	17,119	22,600	22,210					

Table J.4-4 FISCO/Port Vision 2000 EIS/EIR Rail Traffic

Annual Lifts - Sustainable

Zone / Terminal		Project Alternative								
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill				
3 J.I.T.			1,242,000	450,000	600,000	1,156,000				
4 SP	158,000	250,000		400,000	609,000					
5 UP	102,000	135,000		135,000						
11 BN/SF	24,000	24,000								
Total	284,000	409,000	1,242,000	985,000	1,209,000	1,156,000				

Annual Lifts - Constrained

Zone / Terminal		Project Alternative							
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill			
3 J.I.T.		I	1,458,000	490,000	650,000	1,357,000			
4 SP		300,000		450,000	660,000				
5 UP	<u> </u>	154,000		154,000					
11 BN/SF	ŀ	24,000							
Total		478,000	1,458,000	1,094,000	1,310,000	1,357,000			

Annual Lifts - Gridlocked

Zone / Terminal				Project Alternative		
	Existing	No Project	Max, Marine/Max, Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
3 J.I.T.			1,782,000	645,000	860,000	1,658,000
4 SP	l	359,000		574,000	874,000	
5 UP	l	194,000		194,000		
11 BN/SF		24,000				•
Total		577,000	1,782,000	1,413,000	1,734,000	1,658,000

Table J.4-5 FISCO/Port Vision 2000 EIS/EIR Traffic at the Port of Oakland

Annual Lifts - Marine Terminals

	Mari	ne Terminal C	Container Th	nroughput
Alternative	Total	To / Fror	n Rail	Other
		Percent	Number	(over-the-road)
Existing	907,934	20%	181,587	726,347
No Project	1,258,848	5%	62,942	1,195,906
Max. Marine/Max. Rail	1,957,134	31.1%	608,669	1,348,465
Min. Marine/Min. Rail	1,586,559	15.0%	237,984	1,348,575
Max. Marine/Min. Rail	2,037,705	33.8%	688,744	1,348,961
Reduced Harbor Fill	2,005,477	32.8%	657,796	1,347,680

Annual Lifts - Railyards

				Rail Intermoda				
Alternative	Capacity	Operating	To / F	rom Marine	Other (domes	tic & trailers)	Total	Surplus
7	· · ·	Efficiency	Number	Percent	Number Percent			Capacity (1)
· Existing	284.000	Existing	181,587	64%	102,413	36%	284,000	11
No Project	577.000	Gridlocked	62,942	11%	514,058	89%	577,000	l li
Max. Marine/Max. Rail		Sustainable	608,669	53%	531,000	47%	1,139,669	1
Min. Marine/Min. Rail		Sustainable	237,984	31%	531,000	69%	768,984	
Max. Marine/Min. Rail		Constrained	688,744	56%	531,000	44%	1,219,744	i II
Reduced Harbor Fill		Constrained	657,796	55%	531,000	45%	1,188,796	168,204

Weekday Truck Trips

, , , , , , , , , , , , , , , , , , ,											
	Marine	Terminals									
Total			Other	Total To / From Marine		Marine	Other (domestic & trailers)				
Total			(over-the-road)		Number	Percent	Number (3)	Percent			
9 869	2 206	22.4%	7,663	2,987	2,206	74%	781	26%			
		5.7%	12,617	5,209	765	15%	4,444	85%			
		34.2%	14,227	11,985	7,395	62%	4,590	38%			
			. 1	7.482	2,891	39%	4,590	61%			
' 1	_,		·	12,958	8,368	65%	4,590	35%			
	- 7 -				7,992	64%	4,590	36%			
	9,869 13,382 21,622 17,119 22,600	Marine Total To / From Number	Marine Terminals Total To / From Rail Number Percent 9,869 2,206 22.4% 13,382 765 5.7% 21,622 7,395 34.2% 17,119 2,891 16.9% 22,600 8,368 37.0%	Marine Terminals Total To / From Rail Number Other (over-the-road) 9,869 2,206 22.4% 7,663 13,382 765 5.7% 12,617 21,622 7,395 34.2% 14,227 17,119 2,891 16.9% 14,228 22,600 8,368 37.0% 14,232	Marine Terminals Total To / From Rail Other Number Percent (over-the-road)	Marine Terminals Rail Integral Total To / From Rail Other Total To / From Number Rail Number Percent (over-the-road) Number N	Total To / From Rail Other Total To / From Marine Number Percent (over-the-road) Total To / From Marine Number Percent Percent Number Total To / From Rail Other Total To / From Marine Other (domes Number Percent Number Percent Number Percent Number Percent Number Other (domes Number Percent Number Other (domes Number Percent Number Other (domes Number Percent Number Other (domes Number Percent Number Other (domes Number Percent Number Other (domes Number Percent Number Other (domes Number Percent Number Other (domes Number Other (domes Number Other (domes Number Percent Number Other (domes Numb				

- (1) The surplus capacity for each alternative shows the number of additional lifts that could be accommodated at the indicated operating efficiency level.
- (2) The domestic and trailer demand at the railyards would be 531,000 (Summit Lynch 1995); therefore, 17,000 containers will be diverted.
- (3) Domestic and trailer truck trips at the railyards (for the project alternatives) are proportional to the number of annual lifts.

Table J.4-6 FISCO/Port Vision 2000 EIS/EIR Marine Traffic

Marine Terminal Acres

Zone / Terminal				Project Alternative]							
	Existing	xisting No Project Max. Marine/Max. Rail Min. Marine/Min. Rail Max. Marine/Min. Rail Reduced Harbo											
1 New Harbor	0.0	0.0	260.0	100.0	290.0	278.0							
6 Middle Harbor	131.7	131.7	131.7	131.7	131.7	131.7							
7 7th St. Harbor	156.7	156.7	156.7	156.7	156.7	156.7							
8 Outer Harbor	180.4	180.4	180.4	202.4	180.4	180.4							
Total	468.7	468.7	728.7	590.7	758.7	746.7							

Employees

Employees / Acre	2.73	3.91	3.91	3.91	3.91	3.91
Zone / Terminal				Project Alternative		
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	1,018	391	1,135	1,088.2
6 Middle Harbor	360	516	516	516	516	515.5
7 7th St. Harbor	428	613	613	613	613	613.2
8 Outer Harbor	492.6	~ 706.0	706.0	792.2	706.0	706.0
Total	1,280.3	1,834.7	2,852.4	2,312.3	2,969.8	2,922.9

Α	AM Trips	348	566
U	AM Trips / Employee	0.27	0.31
Т	PM Trips	359	514
0	PM Trips / Employee	0.28	0.28

Appendix J.5
Peak Hour Marine Terminal Truck Traffic Generation

Table J.5-1 **Marine Terminal Travel Characteristics Existing Condtions**

Auto Trips

71010 11100													
Hour		Zone 6			Zone 7			Zone 8					
Beginning	Middle I	Harbor T	erminal	7th Street Terminal			Outer F	larbor Te	erminal	Total			
	In	Out	Total	in	Out	Total	In	Out	Total	In	Out	Total	
6:00	93	5	98	110	6	116	127	7	134	330	18	348	
7:00	106	6	112	.126	7	133	145	8	153	377	21	398	
8:00	62	3	65	73	4	77	85	4	89	220	11	231	
9:00	52	6	58	62	7	69	72	8	80	186	21	207	
10:00	40	27	67	48	32	80	55	37	92	143	96	239	
11:00	43	43	86	51	51	102	58	58	116	152	152	304	
12:00	47	47	94	56	56	112	64	64	128	167	167	334	
13:00	39	39	78	46	46	92	53	53	106	138	138	276	
14:00	16	65	81	19	77	96	22	89	111	57	231	288	
15:00	5	96	101	6	114	120	7	131	138	18	341	359	
16:00	5	94	99	6	112	118	7	128	135	18	334	352	
17:00	8	74	82	10	88	98	11	101	112	29	263	292	

Truck Trips

Truck Inp	•												
Hour		Zone 6			Zone 7		Zone 8						
Beginning	Middle I	Harbor T	erminal	7th Street Terminal			Outer Harbor Terminal			Total			
	In_	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
6:00	73	0	73	76	0	76	91	0	91	240	0	240	
7:00	90	0	90	94	0	94	113	0	113	297	0	297	
8:00	140	149	289	147	156	303	176	188	364	463	493	956	
9:00	206	252	458	216	264	480	259	317	576	681	833	1,514	
10:00	169	187	356	177	196	373	212	236	448	558	619	1,177	
11:00	213	191	404	223	200	423	268	240	508	704	631	1,335	
12:00	88	150	238	92	157	249	110	189	299	290	496	786	
13:00	209	149	358	219	156	375	263	187	450	691	492	1,183	
14:00	160	185	345	168	194	362	202	233	435	530	612	1,142	
15:00	115	138	253	120	144	264	144	173	317	379	455	834	
16:00	30	73	103	32	76	108	38	91	129	100	240	340	
17:00	0	15	15	0	16	16	0	19	19	0	50	50	

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 6			Zone 7			Zone 8					
Beginning	Middle I	Harbor T	erminal	7th Street Terminal			Outer Harbor Terminal			Total			
	In	Out	Total	In	Out	Totai	ln	Out	Total	ln	Out	Total	
6:00	146	0	146	152	0	152	182	0	182	480	0	480	
7:00	180	0	180	188	0	188	226	0	226	594	0	594	
8:00	280	298	578	294	312	606	352	376	728	926	986	1,912	
9:00	412	504	916	432	528	960	518	634	1,152	1,362	1,666	3,028	
10:00	338	374	712	354	392	746	424	472	896	1,116	1,238	2,354	
11:00	426	382	808	446	400	846	536	480	1,016	1,408	1,262	2,670	
12:00	176	300	476	184	314	498	220	378	598	580	992	1,572	
13:00	418	298	716	438	312	750	526	374	900	1,382	984	2,366	
14:00	320	370	690	336	388	724	404	466	870	1,060	1,224	2,284	
15:00	230	276	506	240	288	528	288	346	634	758	910	1,668	
16:00	60	146	206	64	152	216	76	182	258	200	480	680	
17:00	0	30	30	0	32	32	0	38	38		100	100	

Total Pass	enger C	ar Equiv	valents 1	for Truc	ks and A	Autos								
Hour		Zone 6			Zone 7		Zone 8							
Beginning	Middle I	Harbor T	erminal	7th Street Termina!			Outer H	Outer Harbor Terminal			Total			
	ın	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total		
6:00	239	5	244	262	6	268	309	7	316	810	18	828		
7:00	286	6	292	314	7	321	371	8	379	971	21	992		
8:00	342	301	643	367	316	683	437	380	817	1,146	997	2,143		
9:00	464	510	974	494	535	1,029	590	642	1,232	1,548	1,687	3,235		
10:00	378	401	779	402	424	826	479	509	988	1,259	1,334	2,593		
11:00	469	425	894	497	451	948	594	538	1,132	1,560	1,414	2,974		
12:00	223	347	570	240	370	610	284	442	726	747	1,159	1,906		
13:00	457	337	794	484	358	842	579	427	1,006	1,520	1,122	2,642		
14:00	336	435	771	355	465	820	426	555	981	1,117	1,455	2,572		
15:00	235	372	607	246	402	648	295	477	772	776	1,251	2,027		
16:00	65	240	305	70	264	334	83	310	393	218	814	1,032		
17:00	8	104	112	10	120	130	11	139	150	29	363	392		

Table J.5-2 Marine Terminal Travel Characteristics No Project Alternative

Auto Trips

Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle	Harbor T	erminal	7th S	treet Ten	minal	Outer I	Harbor To	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	151	8	159	180	9	189	207	11	218	538	28	566
8:00	88	5	93	105	6	111	121	6	127	314	17	331
9:00	75	8	83	89	10	99	103	11	114	267	29	296
10:00	57	38	95	68	46	114	79	52	131	204	136	340
11:00	61	61	122	73	73	146	84	84	168	218	218	436
12:00	67	67	134	80	80	160	92	92	184	239	239	478
13:00	56	56	112	66	66	132	76	76	152	198	198	396
14:00	23	93	116	28	110	138	32	127	159	83	330	413
15:00	7	137	144	9	163	172	10	188	198	26	488	514
16:00	7	134	141	8	160	168	10	184	194	25	478	503
17:00	12	106	118	14	126	140	16	145	161	42	377	419

Truck Trips

Huck Hip												
Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor To	erminal		Total	
	In	Out	Total	-In	Out	Total	In	Out	Total	ın	Out	Total
7:00	113	0	113	134	0	134	154	0	154	401	0	401
8:00	177	188	365	210	224	434	242	257	499	629	669	1,298
9:00	259	318	577	309	378	687	355	435	790	923	1,131	2,054
10:00	213	236	449	253	281	534	291	323	614	757	840	1,597
11:00	268	240	508	319	286	605	367	329	696	954	855	1,809
12:00	111	189	300	132	225	357	151	259	410	394	673	1,067
13:00	264	187	451	314	223	537	361	256	617	939	666	1,605
14:00	202	233	435	240	277	517	277	319	596	719	829	1,548
15:00	145	173	318	172	206	378	198	237	435	515	616	1,131
16:00	38	91	129	46	109	155	52	125	177	136	325	461
17:00	0	19	19	0	23	23	0	26	26	0	68	68

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 6			Zone 7			Zone 8				
Beginning	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor To	erminal		Total	
	ln	Out	Total	In	Out	Totai	In	Out	Total	In	Out	Total
7:00	226	0	226	268	0	268	308	. 0	308	802	0	802
8:00	354	376	730	420	448	868	484	514	998	1,258	1,338	2,596
9:00	518	636	1,154	618	756	1,374	710	870	1,580	1,846	2,262	4,108
10:00	426	472	898	506	562	1,068	582	646	1,228	1,514	1,680	3,194
11:00	536	480	1,016	638	572	1,210	734	658	1,392	1,908	1,710	3,618
12:00	222	378	600	264	450	714	302	518	820	788	1,346	2,134
13:00	528	374	902	628	446	1,074	722	512	1,234	1,878	1,332	3,210
14:00	404	466	870	480	554	1,034	554	638	1,192	1,438	1,658	3,096
15:00	290	346	636	344	412	756	396	474	870	1,030	1,232	2,262
16:00	76	182	258	92	218	310	104	250	354	272	650	922
17:00	0	38	38	0	46	46	0	52	52	0	136	136

TOWN 1 433				_								
Hour	ı	Zone 6		1	Zone 7		l	Zone 8				
Beginning	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor To	erminal		Totai	
	In	Out	Total	ln :	Out	Total	In	Out	Total	In	Out	Total
7:00	377	8	385	448	9	457	515	11	526	1,340	28	1,368
8:00	442	381	823	525	454	979	605	520	1,125	1,572	1,355	2,927
9:00	593	644	1,237	707	766	1,473	813	881	1,694	2,113	2,291	4,404
10:00	483	510	993	574	608	1,182	661	698	1,359	1,718	1,816	3,534
11:00	597	541	1,138	711	645	1,356	818	742	1,560	2,126	1,928	4,054
12:00	289	445	734	344	530	874	394	610	1,004	1,027	1,585	2,612
13:00	584	430	1,014	694	512	1,206	798	588	1,386	2,076	1,530	3,606
14:00	427	559	986	508	664	1,172	586	765	1,351	1,521	1,988	3,509
15:00	297	483	780	353	575	928	406	662	1,068	1,056	1,720	2,776
16:00	83	316	399	100	378	478	114	434	548	297	1,128	1,425
17:00	12	144	156	14	172	186	16	197	213	42	513	555

Table J.5-3 **Marine Terminal Travel Characteristics** Maximum Marine/Maximum Rail Alternative

Hour		Zone 1			Zone 6			Zone 7			Zone 8			****************	
Beginning	New H	larbor Te	rminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	299	16	315	151	8	159	180	9	189	207	11	218	837	44	881
8:00	175	9	184	88	5	93	105	6	111	121	6	127	489	26	515
9:00	148	16	164	75	. 8	83	89	10	99	103	11	114	415	45	460
10:00	113	76	189	57	38	95	68	46	114	79	52	131	317	212	529
11:00	121	121	242	61	61	122	73	73	146	84	84	168	339	339	678
12:00	133	133	266	67	67	134	80	80	160	92	92	184	372	372	744
13:00	110	110	220	56	56	112	66	66	132	76	76	152	308	308	616
14:00	46	183	229	23	93	116	28	110	138	32	127	159	129	513	642
15:00	14	271	285	7	137	144	9	163	172	10	188	198	40	759	799
16:00	14	265	279	7	134	141	8	160	168	10	184	194	L I	743	
17:00	23	208	231	12	106	118	14	126	140	16	145	161	65	585	650

Truck Trips

Truck Trips	,														
Hour		Zone 1			Zone 6			Zone 7			Zone 8				1
Beginning	Outer F	larbor Te	erminal	Middle I	Harbor T	erminal	7th St	treet Ter	minal	Outer I	larbor Te	erminal		Total	
	ln	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	231	0	231	117	0	117	139	0	139	160	0	160	647	0	647
8:00	362	386	748	183	195	378	218	232	450	251	268	519	1,014	1,081	2,095
9:00	532	652	1,184	270	330	600	321	393	714	369	452	821	1,492	1,827	3,319
10:00	436	484	920	221	245	466	263	292	555	303	336	639	1,223	1,357	2,580
11:00	550	493	1,043	279	250	529	331	297	628	381	342	723	1,541	1,382	2,923
12:00	227	388	615	115	197	312	137	234	371	157	269	426	636	1,088	
13:00	541	384	925	274	195	469	326	231	557	375	266	641	1,516	1,076	2,592
14:00	415	478	893	210	242	452	250	288	538	288	331	619	1,163	1,339	2,502
15:00	297	356	653	150	180	330	179	214	393	206	247	453	832	997	1,829
16:00	79	188	267	40	95	135	47	113	160	54	130	184	220	526	746
17:00	0	39	39	0	20	20	0	24	24	0	27	27	0	110	110

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

· uccongo.			101 110	ono (1 c		paccong									
Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer F	larbor Te	erminal	Middle	Harbor T	erminat	7th S	treet Ter	minal	Outer I	Harbor Te	erminal		Total	
	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total	În	Out	Total
7:00	462	0	462	234	0	234	278	0	278	320	0	320	1,294	Ö	1,294
8:00	724	772	1,496	366	390	756	436	464	900	502	536	1,038	2,028	2,162	4,190
9:00	1,064	1,304	2,368	540	660	1,200	642	786	1,428	738	904	1,642	2,984	3,654	6,638
10:00	872	968	1,840	442	490	932	526	584	1,110	606	672	1,278	2,446	2,714	5,160
11:00	1,100	986	2,086	558	500	1,058	662	594	1,256	762	684	1,446	3,082	2,764	5,846
12:00	454	776	1,230	230	394	624	274	468	742	314	538	852	1,272	2,176	3,448
13:00	1,082	768	1,850	548	390	938	652	462	1,114	750	532	1,282	3,032	2,152	5,184
14:00	830	956	1,786	420	484	904	500	576	1,076	576	662	1,238	2,326	2,678	5,004
15:00	594	712	1,306	300	360	660	358	428	786	412	494	906	1,664	1,994	3,658
16:00	158	376	534	80	190	270	94	226	320	108	260	368	440	1,052	
17:00	0	78	78	lo	40	40	0	48	48	0	54	54	0	220	220

Total Pass	enger Ca	ar Equiv	alents to	or trucks	and Au	tos									
Hour		Zone 1			Zone 6			Zone 7			Zone 8	- 1			
Beginning	Outer F	larbor Te	erminal	Middle I	Harbor Te	erminal	7th St	reet Ten	minal	Outer F	larbor Te			Total	
	In	Out	Total	ln l	Out	Total	In	Out	Total	In	Out	Total	ln l	Out	Total
7:00	761	16	777	385	8	393	458	9	467	527	11	538	2,131	44	2,175
8:00	899	781	1,680	454	395	849	541	470	1,011	623	542	1,165	2,517	2,188	4,705
9:00	1,212	1,320	2,532	615	668	1,283	731	796	1,527	841	915	1,756	3,399	3,699	7,098
10:00	985	1,044	2,029	499	528	1,027	594	630	1,224	685	724	1,409	2,763	2,926	5,689
11:00	1,221	1,107	2,328	619	561	1,180	735	667	1,402	846	768	1,614		3,103	6,524
12:00	587	909	1,496	297	461	758	354	548	902	406	630	1,036	1,644	2,548	4,192
13:00	1,192	878	2,070	604	446	1,050	718	528	1,246	826	608	1,434	3,340	2,460	
14:00	876	1,139	2,015	443	577	1,020	528	686	1,214	608	789	1,397	2,455	3,191	5,646
15:00	608	983	1,591	307	497	804	367	591	958	422	682	1,104		2,753	
16:00	172	641	813	87	324	411	102	386	488	118	444	562			1 '
17:00	23	286	309	12	146	158	14	174	188	16	199	215	65	805	870

Table J.5-4
Marine Terminal Travel Characteristics
Minimum Marine/Minimum Rail Alternative

Α	uto	Tri	ns

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	New H	larbor Te		Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor Te	erminal		Total	
	In	Out	Total	ln	Out	Tota!	ln	Out	Total	ln	Out	Total	In	Out	Total
7:00	115	6	121	152	8	160	180	9	189	232	12	244	679	· 35	714
8:00	67	4	71	89	5	94	105	6	111	136	7	143	397	22	419
9:00	57	6	63	75	8	83	89	10	99	116	13	129	337	37	374
10:00	44	29	73	58	38	96	68	46	114	88	59	147	258	172	430
11:00	46	46	92	61	61	122	73	73	146	94	94	188	274	274	548
12:00	51	51	102	67	67	134	80	80	160	103	103	206	301	301	602
13:00	42	42	84	56	56	112	66	66	132	86	86	172	250	250	500
14:00	18	70	88	23	93	116	28	110	138	36	143	179	105	416	521
15:00	5	104	109	7	138	145	9	163	172	11	211	222	32	616	648
16:00	5	102	107	7	135	142	8	160	168	11	206	217	31	603	634
17:00	9	80	89	12	106	118	14	126	140	18	162	180	53	474	527

Truck Trips

Hour		Zone 1			Zone 6			Zone 7			Zone 8	7			
Beginning	Outer I	larbor Te	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	larbor Te	erminal		Total	
	ln	Out	Total	In	Out	Total	In	Out	Total	İn	Out	Total	In	Out	Total
7:00	87	0	87	114	0	114	136	0	136	176	0	176	513	0	513
8:00	136	145	281	179	191	370	213	227	440	275	293	568	803	856	1,659
9:00	200	245	445	263	323	586	313	384	697	405	496	901	1,181	1,448	2,629
10:00	164	182	346	216	240	456	257	285	542	332	368	700	969	1,075	2,044
11:00	207	185	392	272	244	516	324	290	614	418	375	793	1,221	1,094	2,315
12:00	85	146	231	112	192	304	134	229	363	173	295	468	504	862	1,366
13:00	203	144	347	268	190	458	318	226	544	411	292	703	1,200	852	2,052
14:00	156	179	335	205	236	441	244	281	525	315	363	678	920	1,059	1,979
15:00	111	134	245	147	176	323	175	209	384	226	270	496	659	789	1,448
16:00	30	70	100	39	93	132	46	110	156	60	143	203	175	416	591
17:00	0	15	15	0	19	19	0	23	23	0	30	30	0	87	87

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 1			Zone 6			Zone 7			Zone 8			2417 E 770 L	
Beginning	Outer I	larbor Te	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor T	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	174	0	174	228	0	228	272	0	272	352	0	352	1,026	0	1,026
8:00	272	290	562	358	382	740	426	454	880	550	586	1,136	1,606	1,712	3,318
9:00	400	490	890	526	646	1,172	626	768	1,394	810	992	1,802	2,362	2,896	5,258
10:00	328	364	692	432	480	912	514	570	1,084	664	736	1,400	1,938	2,150	4,088
11:00	414	370	784	544	488	1,032	648	580	1,228	836	750	1,586	2,442	2,188	4,630
12:00	170	292	462	224	384	608	268	458	726	346	590	936	1,008	1,724	2,732
13:00	406	288	694	536	380	916	636	452	1,088	822	584	1,406	2,400	1,704	4,104
14:00	312	358	670	410	472	882	488	562	1,050	630	726	1,356	1,840	2,118	3,958
15:00	222	268	490	294	352	646	350	418	768	452	540	992	1,318	1,578	2,896
16:00	60	140	200	78	186	264	92	220	312	120	286	406	350	832	1,182
17:00	0	30	30	0	38	38	0	46	46	0	60	60	0	174	174

Total Fass		ar Equit	4.0.100 1	or made	o una A	1103									
Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer I	Harbor To	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor Te	erminal	l	Total	-
	In	Out	Total	.In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	289	6	295	380	8	388	452	9	461	584	12	596	1,705	35	1,740
8:00	339	294	633	447	387	834	531	460	991	686	593	1,279	2,003	1,734	3,737
9:00	457	496	953	601	654	1,255	715	778	1,493	926	1,005	1,931	2,699	2,933	5,632
10:00	372	393	765	490	518	1,008	582	616	1,198	752	795	1,547	2,196	2,322	4,518
11:00	460	416	876	605	549	1,154	721	653	1,374	930	844	1,774	2,716	2,462	5,178
12:00	221	343	564	291	451	742	348	538	886	449	693	1,142	1,309	2,025	3,334
13:00	448	330	778	592	436	1,028	702	518	1,220	908	670	1,578	2,650	1,954	4,604
14:00	330	428	758	433	565	998	516	672	1,188	666	869	1,535	1,945	2,534	4,479
15:00	227	372	599	301	490	791	359	581	940	463	751	1,214	1,350	2,194	3,544
16:00	65	242	307	85	321	406	100	380	480	131	492	623	381	1,435	1,816
17:00	9	110	119	12	144	156	14	172	186	18	222	240	53	648	701

Table J.5-5
Marine Terminal Travel Characteristics
Maximum Marine/Minimum Rall Alternative

Aut	ıT o	ips

Auto IIIpo															
Hour		Zone 1		ŀ	Zone 6			Zone 7		Į	Zone 8				
Beginning	New H	larbor Te	rminal	Middle	Harbor T	erminal	7th St	treet Ter	minal	Outer I	larbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	ln i	Out	Total	In	Out	Total
7:00	333	18	351	151	8	159	180	9	189	207	11	218	871	46	917
8:00	195	10	205	88	5	93	105	6	111	121	6	127	509	27	536
9:00	166	18	184	75	8	83	89	10	99	103	11	114	433	47	480
10:00	127	84	211	57	38	95	68	46	114	79	52	131	331	220	551
11:00	134	134	268	61	61	122	73	73	146	84	84	168	352	352	704
12:00	148	148	296	67	67	134	80	80	160	92	92	184	387	387	774
13:00	123	123	246	56	56	112	66	66	132	76	76	152	321		642
14:00	51	204	255	23	93	116	28	110	138	32	127	159	134		668
15:00	16	303	319	7	137	144	9	163	172	10	188	198	42	791	833
16:00	16	296	312	7	134	141	8	160	168	10	184	194		774	815
17:00	26	232	258	12	106	118	14	126	140	16	145	161	68	609	677

Truck Trips

Truck Trips															
Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer I	larbor Te	erminal	Middle I	Harbor To	erminal	7th S	treet Ter	minal	Outer F	larbor Te			Total	
	In	Out	Total	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total
7:00	259	0	259	118	0	118	140	0	140	161	0	161	678	0	678
8:00	406	432	838	184	196	380	219	233	452	252	269	521	1,061	1,130	2,191
9:00	596	730	1,326	271	332	603	322	394	716	371	454	825	1,560	1,910	3,470
10:00	489	542	1,031	222	246	468	264	293	557	304	337	641	1,279	1,418	2,697
11:00	616	552	1,168	280	251	531	333	298	631	383	343	726	1,612	1,444	3,056
12:00	254	435	689	115	197	312	137	235	372	158	270	428	664	1,137	1,801
13:00	606	430	1,036	275	195	470	327	232	559	377	267	644	1,585	1,124	2,709
14:00	464	535	999	211	243	454	251	289	540	289	333	622	1,215	1,400	2,615
15:00	332	398	730	151	181	332	179	215	394	207	248	455	869	1,042	1,911
16:00	88	210	298	40	95	135	48	113	161	55	131	186	231	549	780
17:00	o	44	44	o	20	20	0	24	24	0	27	27	0	115	115

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer I	larbor Te	erminal	Middle	Harbor T	erminal	7th St	treet Ten	minal	Outer I	larbor Te	rminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	ln	Out	Total
7:00	518	0	518	236	0	236	280	0	280	322	0	322	1,356	0	1,356
8:00	812	864	1,676	368	392	760	438	466	904	504	538	1,042	2,122	2,260	4,382
9:00	1,192	1,460	2,652	542	664	1,206	644	788	1,432	742	908	1,650	3,120	3,820	6,940
10:00	978	1,084	2,062	444	492	936	528	586	1,114	608	674	1,282	2,558	2,836	5,394
11:00	1,232	1,104	2,336	560	502	1,062	666	596	1,262	766	686	1,452	3,224	2,888	6,112
12:00	508	870	1,378	230	394	624	274	470	744	316	540	856	1,328	2,274	3,602
13:00	1,212	860	2,072	550	390	940	654	464	1,118	754	534	1,288	3,170	2,248	5,418
14:00	928	1.070	1,998	422	486	908	502	578	1,080	578	666	1,244	2,430	2,800	5,230
15:00	664	796	1,460	302	362	664	358	430	788	414	496	910	1,738	2,084	3,822
16:00	176	420	596	80	190	270	96	226	322	110	262	372	462	1,098	1,560
17:00	0	88	88	0	40	40	0	48	48	0	54	54	0	230	230

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer H	Harbor Te	erminal	Middle	Harbor T	erminal	7th S	treet Ten	minal	Outer I	larbor Te	rminal		Total	
∬	In	Out	Total	In	Out	Total	ln	Out	Total	ln l	Out	Total	In	Out	Total
7:00	851	18	869	387	8	395	460	9	469	529	11	540	2,227	46	. 2,273
8:00	1,007	874	1,881	456	397	853	543	472	1,015	625	544	1,169	2,631	2,287	4,918
9:00	1,358	1,478	2,836	617	672	1,289	733	798	1,531	845	919	1,764	3,553	3,867	7,420
10:00	1,105	1,168	2,273	501	530	1,031	596	632	1,228	687	726	1,413	2,889	3,056	5,945
11:00	1,366	1,238	2,604	621	563	1,184	739	669	1,408	850	770	1,620	3,576	3,240	6,816
12:00	656	1,018	1,674	297	461	758	354	550	904	408	632	1,040	1,715	2,661	4,376
13:00	1,335	983	2,318	606	446	1,052	720	530	1,250	830	610	1,440	3,491	2,569	6,060
14:00	979	1,274	2,253	445	579	1,024	530	688	1,218	610	793	1,403	2,564	3,334	5,898
15:00	680	1,099	1,779	309	499	808	367	593	960	424	684	1,108	1,780		4,655
16:00	192	716	908	87	324	411	104	386	490	120	446	566	L I		2,375
17:00	26	320	346	12	146	158	14	174	188	16	199	215	68	839	907

Table J.5-6 Marine Terminal Travel Characteristics Reduced Harbor Fill Alternative

Auto Trips

Hour		Zone 1			Zone 6			Zone 7			Zone 8		<u> </u>		
Beginning	New H	larbor Te		Middle	Harbor T	erminat	7th S	treet Ter	minal	Outer F	larbor Te	erminal		Tota!	i
	In	Out	Total	In	Out	Total	ln	Out	Total	In	Out	Total	In	Out	Total
7:00	319	17	336	151	8	159	180	9	189	207	11	218	857	45	902
8:00	187	10	197	88	5	93	105	6	111	121	6	127	501	27	528
9:00	159	18	177	75	8	83	89	10	99	103	11	114	426	47	473
10:00	121	81	202	57	38	95	68	46	114	79	52	131	325	217	542
11:00	129	129	258	61	61	122	73	73	146	84	84	168	347	347	694
12:00	142	142	284	67	67	134	80	80	160	92	92	184	381	381	762
13:00	118	118	236	56	56	112	66	66	132	76	76	152	316	316	632
14:00	49	196	245	23	93	116	28	110	138	32	127	159	132	526	658
15:00	15	290	305	7	137	144	9	163	172	10	188	198	41	778	819
16:00	15	284	299	7	134	141	8	160	168	10	184	194	40	762	802
17:00	25	223	248	12	106	118	14	126	140	16	145	161	67	600	667

Truck Trips

Hour		Zone 1			7 0			-							
31 1					Zone 6			Zone 7			Zone 8				
Beginning	Outer I	Harbor To	erminal	Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer F	larbor Te	erminal		Total	- 1
	In	Out	Total	in	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	248	0	248	117	0	117	140	0	140	161	0	161	666	0	666
8:00	388	413	801	184	196	380	219	233	452	252	268	520	1,043	1,110	2,153
9:00	571	699	1,270	270	331	601	322	394	716	370	453	823	1,533	1,877	3,410
10:00	468	519	987	222	246	468	264	293	557	303	337	640	1,257	1,395	2,652
11:00	589	528	1,117	279	250	529	332	298	630	382	343	725	1,582	1,419	3,001
12:00	243	416	659	115	197	312	137	235	372	158	270	428	653	1,118	1,771
13:00	580	412	992	275	195	470	327	232	559	376	267	643	1,558	1,106	2,664
14:00	444	512	956	210	243	453	250	289	539	288	332	620	1,192	1,376	2,568
15:00	318	381	699	151	181	332	179	215	394	206	247	453	854	1,024	1,878
16:00	84	201	285	40	95	135	47	113	160	55	130	185	226	539	765
17:00	0	42	42	0	20	20	0	24	24	0	27	27	o	113	113

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour		Zone 1			Zone 6			Zone 7			Zone 8				
Beginning	Outer F	larbor Te		Middle	Harbor T	erminal	7th S	treet Ter	minal	Outer I	Harbor Te	erminal		Total	
	In	Out	Total	In	Out	Total	In	Out	Total	in	Out	Tota!	In	Out	Total
7:00	496	0	496	234	0	234	280	0	280	322	0	322	1,332	0	1,332
8:00	776	826	1,602	368	392	760	438	466	904	504	536	1,040	2,086	2,220	4,306
9:00	1,142	1,398	2,540	540	662	1,202	644	788	1,432	740	906	1,646	3,066	3,754	6,820
10:00	936	1,038	1,974	444	492	936	528	586	1,114	606	674	1,280	2,514	2,790	5,304
11:00	1,178	1,056	2,234	558	500	1,058	664	596	1,260	764	686	1,450	3,164	2,838	6,002
12:00	486	832	1,318	230	394	624	274	470	744	316	540	856	1,306	2,236	3,542
13:00	1,160	824	1,984	550	390	940	654	464	1,118	752	534	1,286	3,116	2,212	5,328
14:00	888	1,024	1,912	420	486	906	500	578	1,078	576	664	1,240	2,384	2,752	5,136
15:00	636	762	1,398	302	362	664	358	430	788	412	494	906	1,708	2,048	3,756
16:00	168	402	570	80	190	270	94	226	320	110	260	370	452	1,078	1,530
17:00	0	84	84	0	40	40	0	48	48	0	54	54	0	226	226

Hour		Zone 1			Zone 6			Zone 7		<u> </u>	Zone 8				
Beginning	Outer F	larbor Te	erminal	Middle I	Harbor T	erminal	7th S	treet Ter	minal	Outer I	larbor To	erminal		Total	
	In	Out	Total	In	Out	Total	İn	Out	Total	In	Out	Total	In	Out	Total
7:00	815	17	832	385	8	393	460	9	469	529	11	540	2,189	45	2,234
8:00	963	836	1,799	456	397	853	543	472	1,015	625	542	1,167	2,587	2,247	4,834
9:00	1,301	1,416	2,717	615	670	1,285	733	798	1,531	843	917	1,760	3,492	3,801	7,293
10:00	1,057	1,119	2,176	501	530	1,031	596	632	1,228	685	726	1,411	2,839	3,007	5,846
11:00	1,307	1,185	2,492	619	561	1,180	737	669	1,406	848	770	1,618	3,511	3,185	6,696
12:00	628	974	1,602	297	461	758	354	550	904	408	632	1,040	1,687	2,617	4,304
13:00	1,278	942	2,220	606	446	1,052	720	530	1,250	828	610	1,438	3,432	2,528	5,960
14:00	937	1,220	2,157	443	579	1,022	528	688	1,216	608	791	1,399	2,516	3,278	5,794
15:00	651	1,052	1,703	309	499	808	367	593	960	422	682	1,104	1,749	2,826	4,575
16:00	183	686	869	87	324	411	102	386	488	120	444	564	492	1,840	2,332
17:00	25	307	332	12	146	158	14	174	188	16	199	215	67	826	893

Table J.5-7 Marine Terminal Travel Characteristics

Auto Traffic

		Zone 1			Zone 6			Zone 7			Zone 8				
	New H	arbor Ter	minal	Middle I	larbor Te	erminal	7th S	treet Ter			larbor To			Total	
	In	Out	Total	In	Out	Total	ln	Out	Total	ln	Out	Total	In	Out	Total
Existing Conditions															
AM Peak											4				204
Traffic Volume		1		62	3	65	73	4	77	85	4	89	220	11 5%	231
Splits (In - Out)				95%	5%		95%	5%		96%	4%	200/	95%	5%	4000
Percent of Marine Traffic						28%			33%			39%	 		100%
PM Peak	1			اے		404	اءا	444	400	_	131	138	18	341	359
Traffic Volume		- 1		5	96	101	6	114	120	7 5%	95%	136	5%	95%	339
Splits (In - Out)		i	- 1	5%	95%	000/	5%	95%	33%	3%	95%	38%	370	9376	100%
Percent of Marine Traffic	<u> </u>					28%		L	33%	L		30 /0	L		-10070
No Project Alternative													1		
AM Peak											_	100	المما	4-1	
Traffic Volume			i	88	5	93	105	6	111	121	6	127	314	17	331
Splits (In - Out)		1		95%	5%		95%	5%	0.40/	95%	5%	000/	95%	5%	100%
Percent of Marine Traffic						28%			34%			38%			100%
PM Peak			1	_	4	,,,	_	4	470	4.0	400	198	26	488	514
Traffic Volume		l		7	137	144	9 5%		172	10 5%	188 95%	198	5%	95%	314
Splits (In - Out)		1		5%	95%		5%	95%	33%	5%	95%	39%	370	9576	100%
Percent of Marine Traffic						28%	l		33%			3976			100 /8
Maximum Marine/Maximu	m Rail	Altern	ative			,						1	T		
AM Peak											_	1	400		545
Traffic Volume	175	9	184	88	5	93	105				6	127		26	515
Splits (In - Out)	95%	5%		95%	5%		95%	5%		95%	5%	I	95%	5%	4000/
Percent of Marine Traffic			36%			18%			22%			25%			100%
PM Peak				_			١.		470	۱	400	400	40	759	799
Traffic Volume	14	271	285	I .	137	144	8	1	i .	la .	188 95%	198	5%	95%	
Splits (In - Out)	5%	95%	2001	5%	95%	400/	5%	95%	22%	5%	95%	25%	rı :	9570	100%
Percent of Marine Traffic			36%	<u> </u>		18%	L	L	2270	1	L	2576	Ü		10070
Minimum Marine/Minimu	m Rail	Alterna	tive			,		<u>, </u>					u		
AM Peak					_					400	١ _	440	207		419
Traffic Volume	67	4	71	ы	5	94	46		1	II .	7	1	397 95%	22 5%	
Splits (In - Out)	94%	6%		95%	5%		95%	5%	1	95%	5%	1	95%	5%	100%
Percent of Marine Traffic			17%			22%	 		26%	ļ		34%			100 /6
PM Peak	_	ا ا	400	_	400	445	9	163	172	11	211	222	32	616	648
Traffic Volume	5		109	7 5%	138 95%		5%			5%	1		5%	95%	
Splits (In - Out)	5%	95%	17%	5%	95%	22%	37] ***	27%	8	337	34%	1	""	100%
Percent of Marine Traffic	li		17 70	L	L	2270	11	<u> </u>	1 2170	ш	L	1 0 1.13	ii		1
Maximum Marine/Minimu	m Rail	Altern	ative							,				· · · · · · · · · · · · · · · · · · ·	·
AM Peak								1			1				
Traffic Volume	195	10	205	II.	5		8	1	1	10	6	1	11	27	t .
Splits (In - Out)	95%	5%		95%	5%		95%	5%	·	95%	5%	1	95%	5%	
Percent of Marine Traffic			38%			17%	ļ	ļ	21%			24%	4		100%
PM Peak				ı											
Traffic Volume	16		319	ш	1	1			1				II .	1	1
Splits (In - Out)	5%	95%		5%	95%	1	5%	95%	1	5%	95%		5%	95%	1
Percent of Marine Traffic	<u> </u>	<u> </u>	38%	1	L	17%	<u>l</u>	<u> </u>	21%	<u> </u>	<u> </u>	24%		<u></u>	100%
Reduced Harbor Fill Alte	rnative)						.,					10		
AM Peak					l			1	1						
Traffic Volume	187	10	197					1				1	n		
Splits (In - Out)	95%	5%	ŀ	95%	5%	•	95%	5%		95%	5%		95%	5%	1
Percent of Marine Traffic	<u> </u>	<u></u>	37%		L	18%	4		21%	4	ļ	24%		 	100%
PM Peak				1			.								
Traffic Volume	15			н				1	•	III	I.		H	1	1
Splits (In - Out)	5%	95%	3	5%	95%		5%	6 95%		5%	95%		5%	95%	
Percent of Marine Traffic	1	<u> </u>	37%	<u> </u>	1	18%	·	<u> </u>	21%			24%	ၜ႞	1	100%

Table J.5-8
Marine Terminal Travel Characteristics

Truck Traffic (In passenger car equivalents: 1 truck = 2 cars)

New Harbor Terminal Modifile Harbor Terminal 7th Street Terminal Outer Harbor Terminal Total In Out In Out		17-7														
Existing Conditions MA Peak Traffic Volume Spilts (in - Out)		١	Zone 1			Zone 6			Zone 7			Zone 8				
Existing Conditions				_			,	-								· · · · · · · · · · · · · · · · · · ·
AMP Peak Traffic Volume Splits (in - Out) A8% S2% A8% S2% A9% S1% S2% A8% S2%		_ in	Out	lotal	<u>In</u>	Out	Total	In	Out	Total	<u>In</u>	Out	Total	<u>In</u>	Out	Total
AMP Peak Traffic Volume Splits (in - Out) A8% S2% A8% S2% A9% S1% S2% A8% S2%	Evisting Conditions															
Triffic Volume Spills (in Out)											r			r		
Splits (in - Out)												l				
Percent of Marine Traffic PM Peak Traffic Volume Splits (in - Out) Percent of Marine Traffic 220 276 506 240 288 528 288 346 334 758 910 1,66 Splits (in - Out) Percent of Marine Traffic 354 376 55% 30% 55% 32% 55% 32% 45% 55% 38% 45% 55% 100 NO Project Alternative MAP Peak Traffic Volume Splits (in - Out) Percent of Marine Traffic 354 376 730 420 448 868 484 514 998 1,258 1,338 2,56 Splits (in - Out) Percent of Marine Traffic 354 376 730 420 448 868 484 514 998 1,258 1,338 2,56 Splits (in - Out) Percent of Marine Traffic 354 376 54% 28% 52% 33% 48% 52% 33% 48% 52% 33% 46% 54% 38% 46% 52% 30% 46% 54% 38% 46% 52% 30% 46% 54% 38% 46% 52% 30% 46% 54% 38% 46% 52% 30% 46% 54% 38% 46% 54% 38% 46% 54% 38% 46% 54% 38% 46% 54% 38% 46% 54% 38% 46% 54% 38% 46% 54% 38% 52% 48%	1				i I	1	578	l		606				H	1	1,912
PM Peak Traffic Volume Splits (in - Out)				Ï	48%	52%		49%	51%		48%	52%	1	48%	52%	ĺ
Traffic Volume Splits (in - Out) A5% 55% 30% A5% 30% A5% A5% 55% A5%							30%			32%			38%	<u></u>		100%
Solits (In - Out)								ĺ							1	
Percent of Marine Traffic							506			528	i			ll .		1,668
NO Project Alternative AM Peak Traffic Volume Splits (in - Out) Percent of Marine Traffic Maximum Marine/Minimum Rail Alternative AM Peak Traffic Volume APW 52% 28% 28% 28% 52% 33% 48% 52% 38% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 52% 52% 58% 58% 58% 58% 58% 58% 58% 58% 58% 58	· · · · · · · · · · · · · · · · · · ·			1	45%	55%		45%	55%	:	45%	55%		45%	55%	
AM Peak Traffic Volume Splits (in - Out) 48% 52% 48% 52% 48% 52% 48% 52% 38% 48% 52% 48% 52% 38% 48% 52% 48% 5	Percent of Marine Traffic				l		30%	L		32%			38%	l	<u> </u>	100%
Traffic Volume Splits (in - Out)	No Project Alternative															
Spits (in - Out)	AM Peak							1			I			[1	T
Spits (in - Out)	Traffic Volume				354	376	730	420	448	868	484	514	998	1 258	1 338	2 596
Percent of Marine Traffic 28% 33% 38% 38% 100 100 PM Peak Traffic Volume Splits (in - Out) PM Peak Traffic Volume At 100 48% 52% 4											1] -,000
PM Peak Traffic Volume Splits (in - Out) Africance Afric	· · · · · ·	l l			""	0270	28%	10,0	0270	33%	~~~	02,0	38%	4070	0270	100%
Traffic Volume Splits (in - Out) Percent of Marine Traffic							2070			00 70			30 /8			100%
Spits (in - Out)				ļ	200	346	636	344	412	756	306	474	970	1 020	1 222	2 252
Percent of Marine Traffic							030	l .		730			870			2,202
Maximum Marine/Maximum Rail Alternative T24 T72 1,496 366 390 756 436 464 900 502 536 1,038 2,028 2,162 4,19 4,19 5,105 4,105 4,105	, , ,				40%	34 /0	28%	4070	3470	330/	40%	34 %	200/	40%	5476	1000/
AM Peak Traffic Volume Splits (in - Out) 48% 52% 48% 52% 18% 48% 52% 21% 48% 52% 25% 48% 52% 1009	T CICCIN OF MAINE TRAINC		1				20 /0	L		33 /0]	l		36 /6	L	1	100%
Traffic Volume 724 772 1,496 366 390 756 436 484 900 502 536 1,038 2,028 2,162 4,19 48% 52% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 45% 55% 48% 52%		m Rail	Altern	ative	,,						,	·				
Splits (In - Out)									i					Í	İ	
Percent of Marine Traffic		!!		1,496	1 1		756	, ,		900	4 1		1,038			4,190
PM Peak Traffic Volume	, , ,	48%	52%		48%	52%		48%	52%		48%	52%		48%	52%	
Traffic Volume Splits (In - Out) 45% 55% 38% 45% 55% 18% 55% 45% 21% 55% 45% 25% 45% 55% 38% 380 380 380 380 380 45% 55% 18% 55% 38% 45% 55% 21% 55% 25% 45% 55% 25% 38% 380 380 380 380 380 380 380 380 380 380				36%			18%			21%			25%			100%
Splits (In - Out)																
Percent of Marine Traffic 36% 18% 21% 25% 1009		1		1,306	l I		660			786			906	, .		3,658
Minimum Marine/Minimum Rail Alternative		45%	55%	İ	45%	55%		46%	54%		45%	55%		45%	55%	
AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Traffic Volume Splits (In - Out) Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic Abs. Sp.	Percent of Marine Traffic			36%]		i	18%			21%	L		25%		l	100%
Traffic Volume Splits (In - Out) 48% 52% 48% 5	Minimum Marine/Minimur	n Rail	Alterna	tive												
Splits (In - Out)	AM Peak															
Splits (In - Out)	Traffic Volume	272	290	562	358	382	740	426	454	880	550	586	1.136	1.606	1.712	3,318
Percent of Marine Traffic	Splits (In - Out)	48%											.,			,,,,,
PM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic Maximum Marine/Minimum Rail Alternative AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic				17%			22%			27%			34%	,		100%
Splits (In - Out)	PM Peak															
Splits (In - Out)	Traffic Volume	222	268	490	294	352	646	350	418	768	452	540	992	1.318	1.578	2,896
Percent of Marine Traffic 17% 22% 27% 34% 100%	Splits (In - Out)	45%	55%	1	46%	54%		46%	54%	ŀ	46%	54%				_,
AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic As Apeak Traffic Volume As Apeak Traffic Volume Traffic Volume As Apeak Traffic Volume As Apeak Traffic Volume As Apeak Traffic Volume Am Peak Traffic Volume Traffic Volume Am Peak Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume				17%			22%			27%			34%			100%
AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic Percent of Marine Traffic Percent of Marine Traffic As Apeak Traffic Volume As Apeak Traffic Volume Traffic Volume As Apeak Traffic Volume As Apeak Traffic Volume As Apeak Traffic Volume Am Peak Traffic Volume Traffic Volume Am Peak Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume Traffic Volume	Maximum Marine/Minimu	m Pail	Altorn	ativo								,				
Traffic Volume		an	,		———											
Splits (In - Out)		940	964	1 676	200	302	760	420	100	004	504	520	1 040	2 422	2 250	4 202
Percent of Marine Traffic 38% 17% 21% 24% 1009				1,070			760			904			1,042	1		4,302
PM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic AM Peak Traffic Volume AM Peak Traffic Volume Splits (In - Out) Splits (In - Out) Percent of Marine Traffic AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic AM Peak Traffic Volume Splits (In - Out) Percent of Marine Traffic AM Peak Traffic Volume		4070	52%	200/	40%	52%	170/	40%	52%	210/	40%	52%	240/	40%	52%	1000/
Traffic Volume 664 796 1,460 302 362 664 358 430 788 414 496 910 1,738 2,084 3,82 Splits (In - Out) 45% 55% 38% 55% 17% 55% 21% 55% 24% 55% 1009 1009 1009 1009 1009 1009 1009 100				36%			17%			2176			24%			100%
Splits (In - Out)		664	700	4 400	200	200	664	250	420	700	444	400	040	4 700	0.004	2 000
Percent of Marine Traffic 38% 17% 21% 24% 1009	3		1	1,400			004	1		/00			910			3,022
Reduced Harbor Fill Alternative AM Peak Traffic Volume 776 826 1,602 368 392 760 438 466 904 504 536 1,040 2,086 2,220 4,30 Splits (In - Out) Percent of Marine Traffic 48% 52% 48% 52% 48% 52% 21% 24% 100%		45%	55%	2004	45%	55%	470/	45%	55%	240/	45%	55%	0.407	45%	55%	4000/
AM Peak Traffic Volume	Percent of Marine Hallic			30%			17%			2170			24%			100%
Traffic Volume 776 826 1,602 368 392 760 438 466 904 504 536 1,040 2,086 2,220 4,30 Splits (In - Out) 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 100% PM Peak 100% <	Reduced Harbor Fill Alter	native														
Splits (In - Out) 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 48% 52% 100% PM Peak 100% <td>AM Peak</td> <td></td> <td></td> <td></td> <td>Ī</td> <td></td>	AM Peak				Ī											
Percent of Marine Traffic 37% 18% 21% 24% 100% PM Peak 100%	Traffic Volume	776	826	1,602	368	392	760	438	466	904	504	536	1,040	2,086	2,220	4,306
Percent of Marine Traffic 37% 18% 21% 24% 100% PM Peak 100%	Splits (In - Out)				48%			48%	52%	Ì	48%					
PM Peak	, , ,			37%			18%			21%			24%			100%
							$\overline{}$									
		636	762	1,398	302	362	664	358	430	788	412	494	906	1,708	2,048	3,756
Splits (In - Out) 45% 55% 45% 55% 45% 55% 45% 55% 45% 55%					1					1						,,,,,,,,
				37%			18%			21%			24%			100%

Appendix J.6 Peak Hour Project Trip Generation

Table J.6-1 FISCO/Port Vision 2000 EIS/EIR AM Peak Hour Truck Trip Generation

(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	-			
2				
3				
4	74%	238	84	322
5	74%	153	54	208
6	22%	129	449	578
7	22%	135	471	606
8	22%	163	565	728
9				
10				
11		36		

No Project Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	i			
2				
3				
4	15%	92	536	629
5	15%	50	290	340
6	6%	42	688	730
7	6%	50	818	868
8	6%	57	941	998
9				
10	٠			
11		6		

Maximum Marine/Maximum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	34%	512	984	1,496
2		i		
3	62%	1,433	890	2,323
4				
5				
6	34%	259	497	756
7	34%	308	592	900
8	34%	355	683	1,038
9				
10				
11				

Minimum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	17%	95	467	562
2				
3	39%	256	406	662
4	39%	228	361	589
5	39%	77	122	199
6	17%	125	615	740
7	17%	149	731	880
8	17%	192	944	1,136
9				
10				
11				

Maximum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	37%	621	1,055	1,676
2				1
3	65%	805	442	1,247
4	65%	817	448	1,266
5				
6	37%	281	479	760
7	37%	335	569	904
8	37%	386	656	1,042
9				
10				
11				

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	36%	576	1,026	1,602
2				
3	64%	1,549	890	2,439
4				
5				
6	36%	273	487	760
7	36%	325	579	904
8	36%	374	666	1,040
9				
10				
11			<u> </u>	

Table J.6-2 FISCO/Port Vision 2000 EIS/EIR PM Peak Hour Truck Trip Generation

(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1				
2				
3				1
4	74%	207	73	281
5	74%	134	47	181
6	22%	113	393	506
7	22%	118	410	528
8	22%	142	492	634
9				
10				
11		32		

No Project Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1				
2				
3				
4	15%	80	467	548
5	15%	43	253	296
6	6%	36	600	636
7	6%	43	713	756
8	6%	50	820	870
9				
10				
11		5		

Maximum Marine/Maximum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	34%	447	859	1,306
2				
3	62%	1,251	777	2,028
4				
5				
6	34%	226	434	660
7	34%	269	• 517	786
8	34%	310	596	906
9				
10				
11				

Minimum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	17%	83	407	490
2				
3	39%	223	355	578
4	39%	199	315	514
5	39%	67	106	173
6	17%	109	537	646
7	17%	130	638	768
8	17%	168	824	992
9				
10				
11				

Maximum Marine/Minimum Rail Alternative

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	37%	541	919	1,460
2				
3	65%	702	385	1,088
4	65%	713	391	1,104
5				
6	37%	246	418	664
7	37%	292	496	788
8	37%	337	573	910
9				
10				l
11				

Zone	Intern	nodal	Over-the-	Total
	%	Trips	Road Trips	Trips
1	36%	503	895	1,398
2		İ		
3	64%	1,351	776	2,128
4				
5				
6	36%	239	425	664
7	36%	284	504	788
8	36%	326	580	906
9				ļ
10	:			
11				

Table J.6-3

FISCO/Port Vision 2000 EIS/EIR

AM Peak Hour Truck Trip Generation (Inbound / Outbound Splits)

(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermod	al Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1					
2					
3					
4	115	123	41	43	322
5	74	79	26	28	208
6	63	67	217	231	578
7	66	70	228	. 243	606
8	79	84	274	292	728
9					
10					{
11	17	19			36

No Project Alternative

Zone	Intermod	al Trips	Over-the-R	load Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1					
2					
3					
4	45	48	260	276	629
5	24	26	140	149	340
6	20	21	334	355	730
7	24	26	397	422	868
8	28	29	456	485	998
9					
10					
11	3	3			6

Maximum Marine/Maximum Rail Alternative

Zone	Intermod	al Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	248	264	476	508	1,496
2					
3	694	739	431	459	2,323
4					
5					
6	125	133	241	257	756
7	149	159	287	306	1
8	172	183	331	352	1,038
9					
10					
11				1	

Minimum Marine/Minimum Rail Alternative

Zone	Intermod	dal Trips	Over-the-F	load Trips	Total
	Inbound	Outbound	inbound	Outbound	Trips
1	46	49	226	241	562
2					. [
3	124	132	197	210	662
4	110	117	175	186	589
5	37	40	59	63	199
6	60	64	298	317	740
7	72	77	354	377	880
8	93	99	457	487	1,136
9	·				
10					
11					

Maximum Marine/Minimum Rail Alternative

Zone	Intermod	dal Trips	Over-the-f	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	300	320	511	544	1,676
2					
∥ 3	390	415	214	228	1,247
4	396	421	217	231	1,266
5					
6	136	145	232	247	760
7	162	173	276	294	904
8	187	199	. 318	338	1,042
9					
10					
11					

Zone	Intermod	tal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	279	297	497	529	1,602
2					
3	751	799	431	459	2,439
4					
5					1
6	132	141	236	251	760
7	158	168	280	298	904
8	181	193	323	343	1,040
9					
10					
11		<u> </u>		L	

Table J.6-4

FISCO/Port Vision 2000 EIS/EIR

PM Peak Hour Truck Trip Generation (Inbound / Outbound Splits)

(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermod	dal Trips	Over-the-l	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1					
2					
3					
4	94	113	33	40	281
5	61	73	22	26	181
6	51	62	179	214	506
7	54	64	186	224	528
8	64	77	224	269	634
9					
10					
[11]	14	17			32

No Project Alternative

Zone	Intermod	dal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1					
2					
3					
4	37	44	213	255	548
5	20	24	115	138	296
6	17	20	273	327	636
7	20	24	325	388	756
8	23	27	374	447	870
9					
10					
11	2	3			5

Maximum Marine/Maximum Rail Alternative

Zone	Intermod	lal Trips	Over-the-l	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	203	243	391	468	1,306
2					
3	569	682	353	423	2,028
4					
5					
6	103	123	198	237	660
7	122	147	235	282	786
8	141	169	271	325	906
9	j				
10	İ				
11					

Minimum Marine/Minimum Rail Alternative

Zone	Intermod	dal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	38	45	185	222	490
2	-				
3	102	122	161	193	- 578
4	90	108	144	172	514
5	31	37	48	58	173
6	50	59	244	293	646
7	59	71	290	348	768
8	76	91	375	449	992
9					
10	i				
11					

Maximum Marine/Minimum Rail Alternative

Zone	Intermo	dal Trips	Over-the-f	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	246	295	418	501	1,460
2					
3	319	383	175	210	1,088
4	324	389	178	213	1,104
[5			i		
6	112	134	190	228	664
7	133	159	226	271	788
8	153	184	261	312	910
9					1
10					į
11	i				

Zone	Intermod	dal Trips	Over-the-F	Road Trips	Total
	Inbound	Outbound	Inbound	Outbound	Trips
1	229	274	407	488	1,398
2					
3	615	737	353	423	2,128
4					
5	1				
6	109	130	193	232	664
7	129	155	229	275	788
8	148	178	264	316	906
9			į		
10					
11					

Table J.6-5 FISCO/Port Vision 2000 EIS/EIR Distribution from Marine Terminals to Rail Terminals AM Peak Hour

Existing Conditions

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3		
4	· 55.6%	60.8%
5	35.9%	39.2%
6		İ
7		
8		
9		
10		
11	8.5%	

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal	Over-the- Road Trips
1		
2		i
3	100.0%	100.0%
4		
5	:	
5 6		
7	1	
8	<u>[</u>	
∥ 9		
10	1	
11		L

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the- Road Trips
1		
2		
3	49.6%	49.6%
4	50.4%	50.4%
5		
6	ļ	
7		
8		
9		
10		
11		

No Project Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3		
4	62.2%	64.9%
5 6	33.6%	35.1%
. 6	Ì	
7	}	
8		
9		1
10	1	
11	4.2%	

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		.
3		
4	45.7%	45.7%
5	40.6%	40.6%
6	13.7%	13.7%
7		İ
8		
9		
10		
11		

Zone	Intermodal	Over-the- Road Trips
1 2	100.0%	100.0%
6	6	
8	3	
10		

Table J.6-6 FISCO/Port Vision 2000 EIS/EIR Distribution from Marine Terminals to Rail Terminals PM Peak Hour

Existing Conditions

Zone	Intermodal	Over-the-
		Road Trips
1	***	
2		
4	55.6%	60.8%
5	35.9%	39.2%
6		
7		
8		
9	ĺ	
10		
11	8.5%	

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3	100.0%	100.0%
4		
5		
6	ĺ	
7		
8		
9		
10		
11		

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3	49.6%	49.6%
4	50.4%	50.4%
5		
6		
7		İ
8		
9		:
10		į
11		

No Project Alternative

7		
Zone	Intermodal	Over-the-
		Road Trips
1		
2		
2 3		
4	62.2%	64.9%
5	33.6%	35.1%
6		
7		
8	ļ	į.
9		
10		
11	4.2%	

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3		
4	45.7%	45.7%
5	40.6%	40.6%
6	13.7%	13.7%
7		
8		
9		
10		
11		

Zone	Intermodal	Over-the-
		Road Trips
1		
2		
3	100.0%	100.0%
4		
5		
6		
7		
8		
9		
10		
11		

Table J.6-7
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Maximum Marine/Maximum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip	Trip Generation Rates	ion Rate	es		rips Generated	nerated	
		Land Use			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	k Hour
					드		드		<u>n</u>	ш	드	Out
Recreation												
Softball/Baseball	132,000 Sq. Ft.	Developed Regional Park	SANDAG	7.2 Acres	0.48	0.32	0.64	0.96	m	N	Ŋ	
Recreation Area	130,000 Sq. Ft.	(Included Above)				•						
Nature Study	50,000 Sq. Ft.	(Included Above)										_
Beach	120,000 Sq. Ft.	Bay Beach	SANDAG	2.8 Acres			2.64	3.96			7	7
Boat Launch	1 Ramp	(Included Below)										
Marina	116 Berths	Marina	ITE (420)	150 Berths	0.03	0.05	0.11	0.08	4	00	1	1
Roller Blading, etc.		(Included Above)										
di cara												
	·	:	į	i		;		,	1			
		Recreational Comm Ctr	ITE (495)	11,400 Sq. Ft.	0.67	0.41	0.39	0.99	ω	<u>ω</u>	4	-
Snack Bar, etc.	3,000 Sq. Ft.	(Included Above)										
Ceremonial Events	4,000 Sq. Ft.	(Included Above)										
Ceremonial Events	4,400 Sq. Ft.	(Included Above)										
Total Trips									15	15	33	40

Table J.6-8
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Minimum Marine/Minimum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip	Trip Generation Rates	tion Rat	es		Trips Generated	nerated	
		Land Use			AM Pea	k Hour	PM Peal	(Hour	AM Peak Hour PM Peak Hour AM Peak Hour PM Peak Hour	k Hour	PM Pea	k Hour
					u	Out	드	Out	드	Out	ll	Out
Recreation												
Softball/Baseball	132,000 Sq. Ft.	132,000 Sq. Ft. Developed Regional Park	SANDAG	4.9 Acres	0.48	0.32	0.64	96.0	2	7	က	S.
Recreation Area	80,000 Sq. Ft.	80,000 Sq. Ft. (Included Above)										
Beach	3,600 Sq. Ft.	Bay Beach	SANDAG	0.1 Acres			2.64	3.96			0	0
Cummunity									-			
Restaurant, etc.	33,600 Sq. Ft. Recreational (Recreational Comm Ctr	ITE (495)	33,600 Sq. Ft.	0.67	0.41	0.39	0.99	22	4	13	33
Total Trips									24	16	16	38

Table J.6-9
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Maximum Marine/Minimum Rail Alternative

l and Ilca	Amount	Trip Generation	Source	Amount	Trip	Genera	Trip Generation Rates	es	I	Trips Generated	nerated	
		l and Use			AM Pea	k Hour	AM Peak Hour PM Peak Hour AM Peak Hour PM Peak Hour	K Hour	AM Peak	K Hour	PM Peal	Hour
					п	Out	드	Out	드	Out	u	Out
Recreation												
Softball/Baseball	140,000 Sq. Ft.	140,000 Sq. Ft. Developed Regional Park	SANDAG	11.7 Acres	0.48	0.32	0.64	96.0	₍	4		-
Sports Field	175,000 Sq. Ft.	(Included Above)										
Recreation Area	145,000 Sq. Ft.	(Included Above)									-	
Nature Study	50,000 Sq. Ft.	(Included Above)										
Beach	62,000 Sq. Ft.	Bay Beach	SANDAG	2.9 Acres			2.64	3.96		-	∞	=
Roller Blading, etc.	62,500 Sq. Ft.	62,500 Sq. Ft. (Included Above)								•		
Cummunity Restaurant, etc. Snack Bar, etc.	33,600 4,000 Sq. Ft.	3,600 Recreational Comm Ctr 4,000 Sq. Ft. (Included Above)	ITE (495)	37,600 Sq. Ft.	0.67	0.41	0.39	0.99	. 25	15	15	37
Total Trine									31	19	30	59
lotal Itips												

Table J.6-10
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Reduced Harbor Fill Alternative

Land Use	Amount	Trip Generation	Source	Amount	Tri	3 Genera	Trip Generation Rates	es		Trips Generated	nerated	
		Land Use			AM Pea	k Hour	AM Peak Hour PM Peak Hour AM Peak Hour	k Hour	AM Peal		PM Peak Hour	k Hour
					띱	Out	٤	Out	드		<u>e</u>	Out
Recreation												
Softball/Baseball	170,000 Sq. Ft.	170,000 Sq. Ft. Developed Regional Park	SANDAG	14.6 Acres	0.48	0.32	0.64	96.0	7	2	6	4
Sports Field	75,000 Sq. Ft.	75,000 Sq. Ft. (Included Above)										
Recreation Area	200,000 Sq. Ft.	200,000 Sq. Ft. (Included Above)										
Nature Study	100,000 Sq. Ft.	100,000 Sq. Ft. (Included Above)										
Amphitheater	90,000 Sq. Ft.	90,000 Sq. Ft. (Included Above)										······
Beach	537,000 Sq. Ft.	Bay Beach	SANDAG	12.3 Acres			2.64	3.96			33	49
Cummunity												
Restaurant, etc.	33,600	Recreational Comm Ctr	ITE (495)	33,600 Sq. Ft.	0.67	0.41	0.39	0.99	22	4	13	33
Total Trips									29	19	55	96

Appendix J.7 Level of Service Calculations

NOBLD-AM.CMD	Tue Nov 5, 1996 13:08:31	996 13:08	3:31			Page 1-1	-	NOBLD-AM.CMD	AM.CMD	Tue No	Tue Nov 5, 1996 13:08:31	13:08:31			Page	Page 1-2
	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	t Vision 2000 E oject Alternati AM Peak Hour	EIS/EIR Lve	1 1 1 1 1) 				FISCO/Por No Pr	O/Port Vision 2000 EIS No Project Alternative AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	æ			
, , , , , , , , , , , , , , , , , , ,	Trip Generation Report	tion kepo	 Jit) 	· · · ·	· · ·	i e		i	PX	Rate Rate	Trips	s Trips	:	1 % Of
	Forecast for AM Peak Hour	. AM Peak	Hour					ñ ⊭	subzone	Amount Units		100	H	Our	sdili	s lotal
Zone # Subzone	Amount Units	Rate In	Rate	Trips In	Trips Out	~ · ·	% Of Total	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Zone 28	Zone 28 Subtotal			456	6 485	941	1 21.8
1 FISCO 4 & 5	200.00 Employees Subtotal	0.28	0.05	56	10	99	1.5	TOTAL					2417	7 1909		4326 100.0
2 FISCO 1,2,3 Zone 2	500.00 Employees Subtotal	0.28	0.05	140	25	165 165	 									
4 SP Rail Term Zone 4 S	il Term 130.00 Employees Zone 4 Subtotal	0.40	60.0	52 .	12	64	1.5 1.5									
5 UP Rail Term Zone 5 S	il Term 82.00 Employees Zone 5 Subtotal	0.40	0.09	33	7	4 4 0 0	0.0									
6 Middle Harbr Zone 6 S	e Harbr 516.00 Employees Zone 6 Subtotal	0.26	0.05	134	26 26	160	3.7									
7 7th St Harbr Zone 7 S	t Harbr 613.00 Employees Zone 7 Subtotal	0.26	0.05	159	31	190	4 4.								÷	
8 Outer Harbor Zone 8 3	Harbor 706.00 Employees Zone 8 Subtotal	0.26	0.05	184	35 35	219	5.1 5.1									
16 Middle Harbr Zone 16	r 1.00 Trucks Inter 5 Subtotal	20.00	21.00	20	21	4 4 1	6.0									
17 7th St Harbr Zone 17	t Harbr 1.00 Trucks Inter Zone 17 Subtotal	24.00	26.00	. 24	26 26	50	1.2									
18 Outer Harbor Zone 18	Harbor 1.00 Trucks Inter Zone 18 Subtotal	28.00	29.00	. 28	29	57	1.3									
24 SP Rail Term Zone 24	n 1.00 Truck External	1 260.00 276.00	276.00	260	276 276	536 536	12.4									
25 UP Rail Term Zone 25	n 1.00 Truck External 140.00 149.00 5 Subtotal	1 140.00	149.00	140	149	289	6.7									
26 Middle Harbr Zone 26	s Subtotal	1 334.00	355.00	334	355 355	689	15.9									
27 7th St Harbr Zone 27	7 Subtotal	1 397.00 422.00	422.00	397	422	819	18.9									
28 Outer Harbor	r 1.00 Truck External 456.00 485.00	1 456.00	485.00	456	485	941	21.8									
Traffix 6.8.030	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc.,	oc. Licer	ised to	Dowling	Assoc.	., Oakland		Traf!	fix 6.8.030	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	ng Assoc.	Licensed to	o Dowlir	ng Asso	.c., Oa	kland

FISCO/Port Vision 2000 EIS/EIR No Project Alternative

AM Peak Hour

Tue Nov 5, 1996 13:08:31

NOBLD-AM.CMD

NOBLD-AM. CMD	M.CMD			Ē	ue Nov	Tue Nov 5, 1996 13:08:31	96 13	08:31				Page	3-1
				FISC	J/Port	FISCO/Port Vision 2000 EIS/BIR No Project Alternative AM Peak Hour	n 2000 lterna Hour	EIS/	BIR		1 1 2 1) 	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
					rurnin A	Turning Movement Report AM Peak Hour	ment F	teport	1 1 1 1	;		! ! !	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Volume	No	Northbound	pur	ഗ്	Southbound	, pun	ΕĞ	Eastbound	nd	W	Westbound	nd	Total
Type	Left	Left Thru Right	light	Left	Left Thru Right	Right	Left	Left Thru Right	Right	Left	Thru	Right	Left Thru Right Volume
#3 Maritime/Burma	time/	Burma											
Base	S	78	0	0	287	0	0	0	ស	0	0	0	375
Added	0 1	262	0	0	338	212	144	0	0	0	0	0	926
Total	v	340	0	0	625	212	144	0	ഗ	0	0	0	1331
#4 Maritime/14th	time/	14th											
Base	0	16	39	103	261	0	0	0	0	22	0	87	603
Added	319	147	0	0	202	136	115	0	290	0	0	0	1209
Total	319	238	39	103	463	136	115	0	290	22	0	87	1812
#5 Maritime/7th Ext	time/	7th Es	; ,										
Base	159	0	0	0	0	334	69	0	37	0	0	0	599
Added	25	466	0	0	488	4	-	0	2	0	0	0	988
Total	184	466	0	0	488	338	70	0	42	0	0	0	1587
#6 7th/2th Ext	714	ŧ											
Base	15	;	0	0	0	o	C	c	c	26	c	7.4	q
Added	23	118	57	267	137	88	55	399	25	61	469	318	2017
Total	38	118	57	267	137	88	52	399	25	8.	469	, 372	2112
#7 Middle Harbor/Gate 2	le Haı	cbor/6	ate 2										
Base	53	0	45	0	0	0	0	0	39	208	338	0	683
Added	7	0	28	0	0	0	0	207	10	157	217	0	621
PassBy	176	0	264	0	0	0	0	0	117	176	0	0	733
Total	231	0	337	0	0	0	0	207	166	541	522	0	2037
#8 Adeline St./ 3rd	ine St	/ 31	d St.										
Base	œ	0	31	26	0	56	80	9	29	20	59	26	299
Added	0	707	0	0	950	0	0	0	0	0	0	0	1657
Total	80	707	31	26	950	56	80	9	29	20	59	99	1956
#12 Maritime/W.Grand/I-880 Ramps	itime/	W.Gra	nd/I-8	80 Ra	sdw								
Base	0	33		16	28	47	48	394	438	0	300	6	1313
Added	271	0	134	0	0	0	0	0	403	147	0	0	926
Total	271	33	134	16	28	47	48	394	841	147	300	, σ	2269
#13 Adeline/5th/I-880 SB	line/5	th/I-	880 SB	Ramps	ស								
Base	0	0	0	72	109	165	256	51	0	0	169	364	1186
Added	153	117	437	0	177	0	0	0	227	546	0	0	1657
Total	153	117	437	72	286	165	256	51	227	546	169	364	2843

115.0 115.0 114.0 114.0 114.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

30.0 110

222234421 222234434 24634834 24634434

16

14

13 To Gates

11

S

Zone

Percent Of Trips Existing

Trip Distribution Report

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836 380 1216

31 0 31

205 153 358

13 0 13

43

31 0 31

#14 Union/5th/I-880 NB R Base 0 175 45 Added 0 0 227 Total 0 175 272

Table J.7-1 (Continued)

This base This	NOBLD-AM. CMD	AM . CML	_									111111	1 1 1 1 1 1		1111					,,,,,,	1 6 6 1							
Column C	! ! ! !	! ! !		: ! !	FISCO	/Port o Proj	Visio ject A	n 2000 lterna Hour	EIS/	EIR] 								FI	SCO/PG No P	rc Ví rojec AM P	sion 2 : Alte :ak Ho	000 E rnativ ur	IS/EIR re				ı
	Volume Type	NG Left	rthbou Thru R	i	So Left	uthbou Thru F	und Right	Ea Left	Stbou	nd Right	Left	estbou Thru	ght	Total Volume	volu Type	. e	North Et Thr	bound u Righ	1 '	South ft Thr	bound u Rig	!	Eastl ft Th	ound ru Righ	:	West! ft Th	ound u Righ	Total It Volume
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No. No.	Added	564		10;	. 0 :		275	227	7 7 9	000	000	00 6	10,	1076		ت ر				1 77	, ,				ı vo c			
No. No.	TOTAL	0 4	D #	17	4	>	n 0	177	D T	•	•	2	4	0.7		4	•	,	•		,	•	,		,	,	,	,
No. No.	#16 7ti	h/I-88 0	O SB R	amp 0	0	0	٥	0	0	0	65	0	0	65	#170 Base				4		0	0	0	0	0	.0	0	0 -717
Charles Char	Added	00	00	00	00	00	.0 0	00	229	495	0 4	47 4	00	1571	Adde	5 -			4.0		0 0	0 0	00	00	00	00	0 0	00
HATT-889 FYONT REPRESENTATION MATERIAL	TOTAL	>	5	>	>	>	•	>	677	n F	n P	*	>	9	800	4			>		,	•	•	,	,	•	•	,
Contact Cont	#17 14	th/I-8	80 Fro	ntage	Rd.	•	•	c	•	•	,	c		370	#177		c	c	c		-	c		ø	_	c	c	0 -480
Caracteristic Caracteristi	Added	0	227	n 0	20	275	0	0	9 0	0	0		00	502	Adde	ъ	. 0	0 0			. .	, 0		. 6.		. 0	. 0	
Common C	Total	0	227	89	30	275	0	0	0	0	140	0	9	767	Tota		0	0	0		0	0	0	0	0	0	0	0
15 15 16 18 18 18 18 18 18 18	#18 W.(rand/	I-880	Fronta	ige Rd		,	;	;	!	•		;	,	#178			,						Ļ				
151 76 678 233 6 65 368 12 90 299 449 2477 Total 10 -0 0 0 0 0 0 0 0 0	Base	σ (0 ;	0 7	678	4 0 0 0	φ c	6	234	77	0 6		449	1653	Base	~	•	שפ	5 C		.			o ro				265- 0
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#207 #207	Base	-180	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0		0 0	1358	Base	τ	0 0	5 C				,	.			> c		
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#214	Added	0	0	0	0	0	0	0	0	0	178		0	358	Adde	.		4	0		0 (0	۰ ،		٥ (0 (6 1110
#214 0 0 0 0 -178 0 0 0 -286 0 0 0 -464 Base 0 0 0 0 0 0 0 0 -546 -564 0 0 0 0 178 0 0 286 0 0 464 Added 0 0 0 0 0 0 0 0 546 564 0 0 0 0 0 0 0 0 -0 Total 0 0 0 0 0 0 0 0 -0 -0	Total	0	0	0	0	o .	0	0	0	0	0	0	0	0	Tota			0	0		0	0	5	5	>	5	5	5
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1 1 2 3 1	1 1 1	; ; ;		FISC	SCO/Port No Proj	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	t Vision 200	00 EIS/EI native	EIR						1 	1 1 1 1 1 1 1	FISC	O/Por No Pr	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	on 200 Altern k Hour	o EIS/ ative	EIR	! ! ! !	; ; ; ;	1	1 1 1 1
Volume Type		Northbound Et Thru Rig	Northbound Left Thru Right		South t Thr	Southbound Left Thru Right		Eastbound Left Thru Right	;	Westbou Left Thru	Westbound t Thru Right	•	Total Volume	† † 1 1	! ! !			Lin	Link Volume Report	ne Rep	ort	; ; ; ;	1			
7														Volume		- 73		SB Link	ink		EB Link	按	_	WB Link	첫	Total
#21/ Base	٠			0	0 -45			-25	0	0	0	0	-70	Type	In Out	t Total	In	Out	Total	п	Out	Total	in.	Out	Total 1	Volume
Added	J	0	0 0	0		5 0	0		0	0	0	0	71	#3 Mari	#3 Maritime/Burma	rma										
Total	J			J					0	0	0	0	1	Base	83 25	292 375	287	78	365	S	Ŋ	10	0	0	0	750
•														Added				4		14	21	356	0	0	0	1912
#218 Base	0	0 -21	0	0			-21	4-	c	c	c	c	-16	.Total	345 6.	630 975	838	484	1321	149	217	366	0	0	0	2662
Added		0 21		0		0			0	0	. 0		4.7	#4 Mari	#4 Maritime/14th	۽										
Total	ن	0 0		0				0-	0	0	0	0	; 	Base	130 26	283 413	364	178	542	0	0	o	109	142	251	1206
														Added						405	456	861	0	0	0	2419
#219 energy	•	-43		•					ć	ć	6		;	Total	26 77	775 1371	702	440	H	405	456	861	109	142	251	3625
Added	, c	0 0	. ~	,				5 C	-	5 6	07-	5 6	.63		7											
Total		1 6		•					•	> 0	0 0	۰ د	63	#5 Mari	۲	EXC.										
1000	,			2					9	5	0	0	0	Base					403	ដ	493	599	0	0	0	1198
+222														Added					928		29	34	0	0	0	1976
Base	0			٥		- 34	c		¢	•	.20	_	0	Total	650 53	530 1179	826	535	1361	111	522	633	0	0	0	3174
Added	0	0	0	0	0 45			0		0	20	,	100	#6 7th/	#6 7rh/7rh Evt											
Total	0			0			٥		0	0	0	0	·	Base	15 2	26 41	c	5.4	7.4	-	2	ŭ	a	c	ò	6
1														Added	"	4	493	4	983	479	580	1059	847		1571	4034
#225 Baco	c			•					•				,	Total	213 249	9 462	493	545	1037	479	595	1074	927	-	1691	4224
Added	, ,			•					-		1396		-416		;	į										
Total	٥	0	0	0					· c) C	01. *	# / Midd.	le Harbor,	#/ Middle Harbor/Gate 2		•	•	ć	Ġ			ļ	į	;
												l	•	Added			0 0	0 0	· ·	717	271	4.50	274	40	165	1366
#226														Total				0	0	256	610	998	920		1201	2608
Base	0 (0	0	4-	•	0	0	•	0	0	0		-356													
Added	0 (4			0	352	0	0	0	0	356	#8 Adel	ine St./	#8 Adeline St./ 3rd St.										
Total	0			0			0		0	0	0	0	0	Base					116	43	93	136	165	63	228	598
****														Added	707 950				1657	0	0	0	0	0	0	3315
# 2 # B	c			c		200-		. 4.	c					Total	746 1029	9 1775	1002	771	1773	43	93	136	165	63	228	3913
Added	• •			• •			21.5		>	> 0		•	-692													
Toral	· c			•		000			> 0	> 0	4. U (- (269	#12 Mari	time/W.	rar	-880 R	sdwt								
	•			•					>	0	0	0	D	Base		6 499	91	90	181	880	347	1227	309	410	719	2626
														Total	406 551	•	0 5	0 6	0 ,	403	271	674	147		282	1912
														10101	TOT 60%		Y T	у Э	181	1283	819	1901	456	544	1001	4538

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NOBLD-AM. CMD	1. CMD			Ţ	Nov.	Tue Nov 5, 1996 13:08:31	19:	08:31				Page	4-2	NOBLD-AM.CMD	AM.CMD			Ţ	Tue Nov	5, 199	1996 13:08:31	8:31				Page 4	۳.
1 t 1 t 6 t 4		: : : :	1 1 1 1 1	FISCO,	/Port	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	1 2000 Lterna Hour	EIS/1 tive	EIR	1 1 1 1 1	1 1 1 1	† • • • •	 					FISCO,	Port Proj	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	2000 ternat Hour	EIS/E	IR				
Volume	Z O	NB Link Out To	nk Total	H	SB Link Out To	ink Total	ā	EB Link Out To	nk Total	ä	WB Link Out Tot	nk Total	nk Total Total Volume	Volume Type	e i	NB Link Out To	lnk Total		SB Link Out Tot	ink Total	H	EB Link Out To	ink Total	H H	WB Link Out To	ral v	Total olume
#15 7th/I-880 NB Ramp/Frontage Rd Base 569 0 569 111 549 Added 564 0 564 275 227 Total 1133 0 1133 386 776	1/I-880 569 564 1133	NB Ra	tamp/Frc 569 564 1133	ontage 111 275 386		660 502 1162	16 229 245	156 847 1003	172 1076 1248	63 8 71	54 5 5	117 10 127	1518 2152 3670	#165 Base Added Total	000	-722 722 -0	-722 722 -0	-227 227 -0	000	-227 227 -0	495 495 - 0	000	-495 495 -0	000	000	000	-1444 1444 -0
#16 7th/I-880 Base 0 Added 0	1-880 0 0	SB 65 495 560	Ramp 65 495 560	000	000	0,00	0 723 723	0 847 847	0 1571 1571	65 847 912	0 229 229	65 1076 1141	130 3141 3271	#170 Base Added Total	-717 717 -0	000	-717 717 -0	000	-153 153 -0	-153 153 -0	000	000	000	000	-564 564 -0	-564 564 -0	-1434 1433 -1
#17 14th/I-880 Frontage Rd Base 89 140 229 Added 227 275 502 2 Total 316 415 731 3	1/I-88 89 227 316	30 Fron 140 275 415	ntage F 229 502 731	Rd. 30 275 305	6 227 233	36 502 538	000	000	000	146 0 146	119 0 119	265 0 265	530 1004 1534	#177 Base Added Total	000	-351 351 0	-351 351 0	-351 351 0	000	-351 351 0	-129 129 0	000	-129 129 0	000	-129 129 0	-129 129 0	-960 961
#18 W.Grand/I-880 Base 9 60 Added 227 275 Total 236 335	and/I 9 227 236	-880 F 60 275 335	Frontage Rd 69 732 502 185 571 917	ge Rd. 732 185 917	514 151 665	1246 336 1582	311 134 445	167 147 314	478 282 760	601 237 838	912 210 1122	1513 448 1961	3306 1567 4873	#178 Base Added Total	-266 266 -0	000	-266 266 -0	000	370 370 -0	-370 370 -0	-129 129 0	000	-129 129 0	000	-25 25 0	-25 25 0	-790 791 1
#138 Base Added Total	-156 -: 0	-173 - 173 0	-329 329 0	-199 - 199 -0	-180 180 0	-379 379 -0	-24 24 0	-26 -0	-50 50 -0	000		000	-758 757 -1	#182 Base Added Total	-370 370 -0	000	-370 370 -0	-475 - 475 -0	-370 370 -0	-845 845 -0	000	-475 475 -0	-475 475 -0	000		000	-1690 1689 -1
#158 Base Added Total	309	000	-309 309 0	000	-180 180 -0	-180 180 -0	000	000	000	000	-129 129 0	-129 129 0	-618 619 1	#201 Base Added Total	000	000	000	000	000	000	-932 932 0	000	-932 932 0	000	932	-932 932 0	-1864 1864 0
#159 Base - Added Total	-180 180 -0	00,0	-180 180 -0	000	000	000	000	-358 358 -0	-358 358 -0	-178 178 0	000	-178 178 0	-716 716 -0	#204 Base Added Total	000	-580 580 -0	-580 580 -0	-932 932 0	000	-932 932 0	000	000	000	000	-352 352 0	-352 352 0	-1864 1864 0
#160 Base Added Total	000	-178 178 0	-178 178 0	000	000	000	000	-180 180 -0	-180 180 -0	-358 358 -0	000	-358 358 -0	-716 716 -0	#207 Base Added Total	-714 714 -0	000	-714 714 -0	000	-1110 1110 -0	-1110 1110 -0	000	° 0 0		-396 396 0	000	-396 396 0	-222 2220 -0
#161 Base Added Total	000	-464 -0	-464 -464 -0	-178 178 0	000	-178 178 0	-286 286 -0	000	-286 286 -0	000	000	000	- 928 928 - 0	#214 Base Added Total	000	-546 546 -0	546 546 -0	000	000	000	000	-564 564 -0	-564 - 564 -0	-1110 1110 -0	000	-1110 1110 -0	-2220 2220 -0

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NOBLD-AM.CMD	M. CMD		1	ğ	e Nov	Tue Nov 5, 1996 13:08:31	16 13:	08:31				Page 4-4	4-	NOBLD-AM.CMD Tue Nov 5, 199	1996 13:08:31		Page 5-1
				FISCO	/Port o Proj	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	1 2000 Lterna Hour	EIS/E tive	IR					FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	1 2000 EIS/EI Lernative Hour	8	
Volume Type	ä	NB Link Out Total	ik	Ħ	SB Link Out Total	ık otal	ä	EB Link Out Total	k otal	E E	WB Link Out Tot	al V	Total olume	Impact Analysis Report Level Of Service	is Report ervice	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	, , , , , , , , , , , , , , , , , , ,
#217														Intersection	Base Del/ V/	Future Del/ V/	Change
Base	00	-45	- 45	24.5	00	2 4	-25	00	-25	00	-25	-25	-140	LOS # 3 Maritime/Burma B	0	2.0	+ 2.597 D/V
Total	0	•	0		0	0	0	0	0	0	0	0		4 Martinal Company of the Company of	131 0 0 31		
#218 Base	-21	0	-21	0	-42	-42	-25	0	-25	0	4	4-	-92	S Maritime/7th Ext. B	12.8 0.137	7.6	+ 3.33 D/V
Added	21	00	21	00	£	.ει	25	00	25	00	4 0	4 0	93	6 7th/7th Ext. B		17.5	
#219													,	# 7 Middle Harbor/Gate 2 B	6.6 0.167	B 14.4 0.619	+ 7.816 D/V
Base	43	000	43	000	£4.	. 4. 6. 4.	000	2 2 2	20 5	70 0	000	20 7	-126 126	# 8 Adeline St./ 3rd St. B	8.7 0.064	E 46.9 0.615	+38.229 D/V
10041	?	>)	>		•	•	>	•	•	5	>	.	# 12 Maritime/W.Grand/I-880 Ramps B 1:	12.0 0.242	C 17.6 0.528	4 5.690 D/V
#220 Base	0 0	-45	24.5	-79	0 0	-79	0	-54	-54	-20	0 0	-20	-198	# 13 Adeline/Sth/I-880 SB Ramps C 1	18.3 0.236	C 21.4 0.752	+ 3.099 D/V
Added Total		4 V O		60		20		4.0	4.0	0 0		0 70	199	# 14 Union/5th/I-880 NB Ramps C 1	16.4 0.104	C 17.3 0.151	+ 0.940 D/V
#225	•	c	c	ć	ć	ć			Š	;		;		# 15 7th/I-880 NB Ramp/Frontage Rd. B 1	10.9 0.206	C 23.3 0.509	+12.387 D/V
Added	000	000	000	000	200	200		396	396	-416 416		-416 416	-832 833	# 16 7th/I-880 SB Ramp A	0.1 0.020	A 1.6 0.342	+ 1.472 D/V
1000	•	•	•	•			>	>	>	•	>	>	4	# 17 14th/I-880 Frontage Rd. A	2.8 0.000	C 2.5 0.000	+ 0.000 V/C
#228 Base Added	00	00	00	4 4	00	4 4	-352		-352 352	00	-356 -	-356 356	-712 713	# 18 W.Grand/I-880 Frontage Rd. C 1:	19.9 0.237	C 20.6 0.434	+ 0.733 B/V
Total	0	0	0	°	0	°	0	0	0	0	0	0	н				
#244 Base Added	00	00	. 00		-312	009			-692	2.45 2.45	-47 47	92	-1384				
Total	5	D	0	0	0	0	0	o I	0	0-	0	0	0				

NOBLD-AM.CMD Tue Nov 5, 1996 13:08:31 Page 6-1	NOBLD-AM.CMD Tue Nov 5, 1996 13:08:31 Page 7-1
FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #3 Maritime/Burma	tive)
	100 Critical Vol./Cap. (X):): 8 (Y+R = 4 sec) Average Delay (sec/veh): 58 Level Of Service:
North Bound South Bound East Bound Wes	North Bound L - T - R
Control: Protected Protected Protected Protected Rights: Include Include	Control: Protected Protected Permitted Permitted Rights: Include Include
n: 10 20 20 10 20 20 10 20 20 0	een: 10 20 20 10 20 20 10 20 20 10 0 10 0 1
	odule:
j ,8 0 0 28, j: 1.00 1.00 1.00 1.00 1.0 se: 5 78 0 0 287	Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
0 262 0 0 338 212 144 0 0 0 0	319 147 0 0 202 136 115 0 290 0 0
Fasserbyvol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
: 5 340 0 0 625 212 144 0 5 0 0	: 319 238 39 103 463 136 115 0 290 22 0
O1: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 103 463 136 115 0 290
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
1.; 5 357 0 0 656 223 144 0 5 0 0	1.: 319 250 41 103 486 143 115 0 290 22 0
dule: 1900 1900 1900 1900 1900 1900 1900 1.00 1.00 1.00 0.96 0.96 0.95 1.00	Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 190
Lanes: 1.00 2.00 0.00 1.00 1.49 0.51 1.00 0.00 1.00 0.00 0.00 0.00 Final Sat.: 1805 3800 0 1900 2723 925 1805 0 1615 0 0 0	
Capacity Analysis Module: Vol/Sat: CTP MODING: CTP MO	Capacity Analysis Module: Vol/Sat. O:18 0.08 0.08 0.06 0.17 0.17 0.30 0.00 0.30 0.00 0.00 0.05
0.48 0.00 0.00 0.62 0.62 0.20 0.00 0.20 0.00 0.0	e: 0.25 0.33 0.33 0.16 0.24 0.24 0.43 0.00 0.68 : 0.71 0.24 0.24 0.35 0.71 0.71 0.71 0.00 0.45
Level Of Service Module: Delay/Veh: 26.2 9.6 0.0 0.0 6.2 6.2 22.9 0.0 20.7 0.0 0.0 0.0 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Level Of Service Module: Delay/Veh: 25.5 15.9 15.9 24.2 24.2 17.9 0.0 5.0 10.8 0.0 11.2 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0

Table J.7-1 (Continued)

NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31	13:08:31		Page 8	8-1	NOBLD-AM, CMD		Tue Nov	Nov 5, 1996	6 13:08:31	:31		Page	e 9-1
	FISC	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	0000 BIS/BIR rnative ur						FISCO/F	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	2000 E ternati Hour	IS/EIR ve	1 1 1 1 1	! ! !	i ! ! !
****	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ	Level Of Service Computation Report pperations Method (Future Volume Alt.	utation Repor	t ternativ	(e) *********	*	199	4 HCM	Level Of Operations	Level Of Service Co Operations Method (F	mputati uture V	Computation Report (Future Volume Alternative)	c cernati *****	ve)	;
Intersection	Intersection #5 Maritime/7th Ext.	1 Ext.	*******	****	*****	**	Intersection #6 7th/7th Ext	#6 7th/7th Ext.	Ext.		***		***	***************************************	,
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 iec): 8 (Y+R = .e: 48	Crit	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	. (x): :c/veh):	0.417 7.6 B		Cycle (sec): Loss Time (sec): Optimal Cycle:	100 8 : (:	(Y+R =	Cr 4 sec) Av Le	Critical Average D Level Of	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X):	0.	0.390 17.5 C
Approach: Movement:	Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R	South Bound	**************************************	ound - R	********** West Bound L - T -	**** nd R	**************************************	North Bound L - T -	ind R	**************************************	nd R	********** East Bound L - T -	******* ound	West Boun L - T -	**************************************
Control: Rights:	rotected Include	Protected Ovl	Prote	1	Protected Include	1	Control: Rights:	i g ii	,	rot		Protected Include	red ted	Protected	 cted 1
Lanes:	10 20 20	0 0 1 1	0 1 0 0	0 70	0000	۰,	Min. Green: Lanes:	10 20	0 0	10 20 1 0 1 1	0 0	10 20 1 0 2	1 0	1 0 2	20 20 2 0 1
Volume Module:							Volume Module		<u>-</u>		<u>:-</u>		-	; ; ;	-
Base Vol: Growth Adj:	159 0 0 0 1.00	1.00 1.00	334 69 0 1.00 1.00 1.00	1.00	0 0 1.00	0 1.00	Base Vol: Growth Adi:	15 0	0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0 0	0 6	26	
Initial Bse:	159 0	0 0	69		i		Initial Bse:			0		0	0	4	1
PasserByVol:	0	0	40	n 0			Added VOI: PasserByVol:	0 0	ر 0	267 137	880	55 399	72	61 469 0 0	318
Initial Fut:	184 466	0 488	70	42	0	0	Initial Fut:			267 137		55 399	25	87 469	
PHF Adj:	1.00 1.00 1.00	1.00 1.00	1.00 1.00 1.00	1.00	1.00 1.00	1.00	User Adj: PHF Adj:	1.00 1.00	1.00 1	1.00 1.00	1.00.1	1.00 1.00	1.00	1.00,1.00	1.00
PHF Volume: Reduct Vol.	184 466 0	0 488	338 70 0	42	00	0 0	PHF Volume:	38 118						87 469	
Reduced Vol:	184 466	0 488	70			0 0	Reduced Vol:	11	57	267 137	88	55 399	25	0 0 87 469	0 0 9 372
PCE Adj:	1.00 1.00 1.00	1.00 1.00		1.00	1.00	1.00	PCE Adj:			1.00	_		1.00	_	
Final Vol.:		0 513	355 70 0	42	0 0 0	00.1	MLF Adj: Final Vol.:	1.00 1.05 38 124	1.05 1	1.00 1.05 267 144	1.05 1 93	00 1.10	1.10	1.00 1.05 87 492	5 1.00
of the Contraction of the Contra	Jon Module.								-			-	<u></u>	1	
Sat/Lane:		1900 1900	1900	1900	1900	1900	Saturation Flow Module Sat/Lane: 1900 1900	ow Module: 1900 1900	1900	1900 1900	1900	1900 1900	1900	1900 1900) 190¢
Adjustment: Lanes:	1.00 2.00 0.00	1.00 0.94	0.94 0.95 1.00 0.82 1.00 0.00	1.00	0.00 0.00	1.00	Adjustment: Lanes:	0.95 0.95	0.95 0	0.95 0.94	0.94 0	0.95 0.99	0.99	0.95 1.00	0 0.85
Final Sat.:	1805 3800	0 2111	1805	1615	0		Final Sat.:	2433		2170			327		
Capacity Anal						 : (Anal	ysis			_			1	;
Crit Moves:		* * *	* *	5			<pre>Crit Moves:</pre>	****		70.0 SI.07	.0.0	0.03 0.08	0.08	0.05 0.13	0.23
Green/Cycle: Volume/Cap:	0.24 0.82 0.00 0.42 0.16 0.00	0.00 0.58 0.68 0.00	68 0.10 0.00 36 0.39 0.00	0.34	0.00 0.00	0.00	 di -	0.18 0.20	0.20 0	0.33 0.35	0.35 0	0.10 0.20	0.20	0.19 0.29	9 0.62
							$\overline{}$		=		=				- 1
	vice Module: 21.0 1.2	0.0 7.7		14.3	0.0	0.0		••				27.3 22.7	22.7	22.4 18.9	6.2
User DelAdj: AdjDel/Veh:	1.00 1.00 1.00 21.0 1.2 0.0	1.00 1.00 1	4.5 27.9 0.0	1.00	0.0 0.0	1.00	User DelAdj: AdiDel/Veh:	1.00 1.00	1.00 1	1.00 1.00	1.00 1.	1.00 1.00	1.00	1.00 1.00	1.00
Onene:			4 2 0	н		0		۳ د د د		3.5				2 13	
********	*****	******************	*****	******	******	****	****	********	******	********	*****	*******	*****	*****	******

NOBLD-AM. CMD	T.	Tue Nov 5, 1996 13:08:31	96 13:0	8:31		Page	10-1	NOBLD-AM, CMD		٢٠	Tue Nov	5, 1996	13:08:31			Page	9 11-1
	FISC	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	n 2000 lternat Hour	EIS/EIR ive						FISC	O/Port No Proj	t Vision 200 oject Altern AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	EIR	t t		
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #7 Middle Harbor/Gate 2	Level Of Service Computation Report ************************************	Omputat Future	ion Repor	rt ternat			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #B Adeline St./ 3rd St.	1994 HCM	Level Of Service HCM Operations Method ************************************	Of Servons Met	ice Comj	Service Computation Report ************************************	Report	rnative	* *	
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 c): 0 (Y+R : 60	C. (Y+R = .4 sec) A.	ritical verage evel Of	Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:	5. (X): sc/veh)		0.619 14.4 B	Cycle (sec): Loss Time (sec) Optimal Cycle:	1 ec): e:	100 12 (Y+R 92	n 4. ≀ α	sec) Aver	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	./Cap. / // (sec/v vice:	(x): veh):	0 3	0.615 46.9 E
Approach: Movement:	Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R	South Bound	und - R	********** East Bound L - T -	30und - R	* 3 *	* m	**************************************	* 1	**************************************	* -	South Bound	R	******** East Bound	# * * * * * * * * * * * * * * * * * * *	****** West	**************************************
Control: Rights:	Protected Include	 Protected Include	-	Protected Include	:	- Protected Include	otected Include	Control: Rights:	Split Phase Include	Phase lude	 Sp1	Split Phase Include	<u>-</u>	Split Phase Include	- 8 a	Split Inc	Split Phase Include
Min. Green: Lanes:	10 0 20 1 0 0 0 1	0000	0	0 20	1 0	10	2000	Min. Green: Lanes:	10 2	20 20 0 1 0	10	20	20 10	20	0 50	10	20 20 0 1 0
Volume Module:	53 0	0	- 0	0	39	208 338	0 8	Volume Module: Base Vol:	80	:	26	٥	26 8	٠	29		59 56
	1.00 1.00	1.0	00.1	_	ų.	208	1.0	Growth Adj: Initial Bse:	0.1	1.0	1.00		1.0			-	.00 1.00 59 56
Added Vol: PasserByVol:	5 0. (00			157		Added Vol: PasserByVol:			00 (0.50		001	000		
Fut:		1.00 1		1.00 1.00		1.00	-	Fut:	1.00 1.00		1.00			1.00		.00,1.00	
	1.00 1.00 1.00 231 0 337	0 0 0	00.1	1.0	1.00	1.00 1.0 541 55	٦.0		1.00 1.00 8 707	0.1 3	1.00		0.1	1.00		-	59 1.00 56
Reduct Vol: Reduced Vol:	0 0 0 231 0 337	00	00	0 0 0 207	166	0 541 55	0 W	Reduct Vol: Reduced Vol:	0 0 8 707	0 0	0 76	950	0 0 26 8	0 9	29	50 05	0 0
	1.00 1	1.00 1.00	1.00	1.00 1.00		1.001	0 1.00	PCE Adj: MLF Adj:	1.00 1.00	4 4	1.00		1.00 1.00 1.00 1.00 1.00			1.00 1.00	4 4
Final Vol.: 231	•	_	_	0 218	:	541	:	Final Vol.:	8 743	:	27	:	=	:	_	53 6	;
n Fl	ow Module:		- 6		,	-		Saturation Flow Module:	low Module		-	000	000		- 9	0001	5
ment:	1.00			1.00 0.93		0.95		Adjustment:	0.99 0.99								
	1805 0 1615		20.0	0 1965	1569	1805 3800	0	Final Sat.:	38 3565	5 158	60.0	3605	98 1053	790 1	1615	1089 1273	3 1212
Capacity Analysis Module:	ysis Module: 0.13 0.00 0.21	0.00 0.00	00.00	0.00 0.11	0.11	0.30 0.15	00.00	Capacity Analysis Module: Vol/Sat: 0.21 0.21 0	lysis Modu 0.21 0.21	ule: 1 0.21	0.28	0.28 0.	0.28 0.01	0.01 0	0.02 0	0.05 0.05	5 0.05
				0.00 0.20		0.47			0.21 0.21	* 0			0.20				
Volume/Cap: 0	0.39 0.00 0.64	0.00 0.00	0.00 0.	0.00 0.55	0.55	0.64 0.23	3 0.00	Volume/Cap:	1.01 1.01	1 1.01	1.01	1.01 1.	1.01 0.04	0.04 0	0.09 -	0.24 0.24	4 0.24
Level Of Service Module: Delay/Veh: 16.9 0.0	d)			0.0 24.0		14.0		2	vice Modul 53.2 53.2		47.5		20.8			21.8 21.8	
User DelAdj: 1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1,00 1.00	0 1.00	User DelAdj:	1.00 1.00	1.00	1.00 1	1.00 1.47 5 47	1.00 1.00	1.00 1	1.00 1	1.00 1.00	0 1.00
				9 0 0		12			1 20				0.0				
	·*************************************	********	****	******	***	*******	* * * * * * * * * * * * * * * * * * * *	****	*****	****	***	******	*****	****	****	****	***

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Table J.7-1 (Continued)

		PISC	10 111 THOUS A								1 1 1 1 1 1			1		1 4 3 4 4 1				
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		_	No Project Alternative AM Peak Hour	coject Alterna AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	œ.					•		FISCO/ NC	Port V Proje AM	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	000 EIS rnative ur	/EIR			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #12 Maritime/W Grand/I-880 Ramps	1994 HCM C	Level 	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) #12 Maritime/W.Grand/I-880 Ramps	Compute (Future) Ramps	ation Repairs Volume	Altein				Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #13 Adeline/5th/I-880 SB Ramps	1994 ******	Le HCM Ope	Level Of Service Operations Method 	Servi S Meth	Service Computation Report Method (Future Volume Alt ************************************	utatior ure Vol	Computation Report (Future Volume Alternative)	cernati	* *	*
Cycle (sec): Loss Time (sec): Optimal Cycle:	: 100 sec): 10 (Y le: 70	.00 10 (Y+R = 70	* 4 sec)	Critica Average Level C	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	Cap. (X (sec/vel		0.528 17.6		Cycle (sec): Loss Time (sec): Optimal Cycle: 82	sec): :le:	100 12 82	(Y+Ř =	4 sec)	Crit c) Aver	critical Vol./Cap Average Delay (se Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(x): (veh):	* O * * * *	******* 0.752 21.4 C
Approach: Movement:		ound R	South Bound	sound - R	East L -	East Bound	Nest R L - 1	st Bound T	ld R	Approach: Movement:	* ~ ¬	**************************************	ind R	Sout	**************************************	****** " R	******** East Bound - # -	.***** ound - R	****** West	West Bound
Control: Rights:	Protected	ted ude	Protected	ted	 Prot	Protected Include		Protected Include	<u>_</u>	Control:	<u> </u>	Protected		Prof	Protected		Split Phase	lase	Split	Split Phase
Min. Green: Lanes:	10 20 2 0 0	20 1 0	10 20 1 0 0	1 20	10		20 10 1 1 0	20	20	Min. Green: Lanes:	10	20 1 1	0 0	10 1		20 1	10 10 1 0 1	1 0	10 1	include 20 20
Volume Module:					-					[woom omit of								1	;	!
Base Vol:	0 33				48 3		0	300	σ	Base Vol:	0	0	0	72 1	109	165 256	6 51	c	0	169 364
Growth Adj: Initial Bse:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	-	1.00	1.00	1.00	Growth Adj:	1.0	1.00			-		÷.	1.00	-	#1
Added Vol:	271	13			•		403 147	0	n 0	Initial Bse: Added Vol:	153	117	437	2,0	109 16	165 256	6 51	0 0	0 7	169 364
PasserByVol:	0 !							0	0	PasserByVol		0	0		. 0			0	0 1	
Initiai Fut: Naer Adi.	1 00 1 00	134	16		48		147		6 (Initial Fut:		117						227		
PHF Adj:	1.00 1.00		1.00.1	1.00	1.00 1.00	1.00 1.00	00.1	1.00.1	1.00	User Adj:	1.00	1.00					0 1.00	1.00	1.00 1.00	
PHF Volume:	271 33				48 3		147	•	. 6	PHF Volume:	153	117	437	72 2	286 165	55 256	00.1.0	227	1.00 1.00	169 1.00
Reduct Vol:							0	0	0	Reduct Vol:	0	0	0			l		0		
Keduced vol: PCE Adi.	271 33		16 28		48		147		6	Reduced Vol	: 153	117					5 51	227		169 182
MLF Adj:	1.03 1.00	1.00	1 00 1 00	7.00	1.00 1.00	00 1.00	1.00	1.00	1.00	PCE Adj:	1.00	1.00						1.00		
Final Vol.:	279 33	-			48 3		147		0 6	Final Vol.:	153	11.00	437	1.00 1. 72 3	301 173	1.10	0 1.10	1.10	1.00 1.05	05 1.05
											÷		<u>:</u>	- ;	-		;	11	- 1	1
Saturation F	Saturation Flow Module:	:	000				1			Saturation Flow Module	Flow Mc		-			=		-		
Sac/bane: Adiustment:	0.95 0.88	1,900	1900 1900	1900	1900 1900	00 1900	1900		1900	Sat/Lane:	1900	1900						1900		
Lanes:	2.00 0.20		1.00				1.00	1 94 0	1.00	Adjustment: Lanes:	36.0	00.1						0.92		
Final Sat.:	3610 330		1805 645		1805 1900		1805		106	Final Sat.:	1805	1900	1615 1	1805 22	2292 1318	73 1.67 R 2921	580	1.00	1.00 0.96	6 1.04
						1				1 1 1 1 1 1	-		=		- !	_	- ;			:
Capacity Ana Vol/Sat:	Capacity Analysis Module: Vol/Sat: 0.08 0.10 0	le: 0.10	0.01	0	נכיסיבטים	,,,	0	6		Capacity Analysis Modul	alysis	o.	-			-		=		
Crit Moves:				; ;			*	>	, ,	Crit Mores.	80.*	90.0	0.27	0.04 0.	0.13 0.13	3 0.10	0.10		0.30 0.11	1 0.11
Green/Cycle:	0.13		0.11 0.20	0.20	0.19 0.44		0.13	0.38 0	0.38	Green/Cycle:	0.11	0.21	0.58	0 10 0	0.20 0.20	000	. 0	* 0	****	, ,
Volume/Cap:		0	0.08 0.22	0.22	0.14 0.47	47 0.62	0.62		0.22	Volume/Cap:	0.81									
Level Of Service	Level Of Service Module:				-			!						1 1 1 1 1	1 1 1 1 1			11		-
Delay/Veh:	28.6 22.7	22.7	25.9 21.7	21.7	21.7 12.7	.7 14.2	29.8	13.4	13.4	Delav/Veh:	service module	odule:	0	26 0 25	25 1 25 2	, ,,	,	,		
User DelAdj:	1.00 1.00	1.00	1.00 1.00		1.00 1.00		1.00		1.00	User DelAdj	1.00								1.00 1.00	14.1
AdjDel/Veh:	28.6 22.7	22.7	25.9 21.7	21.7	21.7 12.7	14	29.8	13.4	13.4	AdjDel/Veh:				28.0 25			23.1			
	•																			

NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31	1996 13	:08:31		Page	14-1	NOBLD-AM.CMD		Tue	Tue Nov 5, 19	1996 13:0	13:08:31		Page	15-1
	I.A.	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	t Vision 200 oject Altern AM Peak Hour	0 EIS/EIR	; } ! ! ! !					FISCO/	FISCO/Port Vision 2000 EIS No Project Alternative AM Peak Hour	n 2000 Niterna	EIS/EIR :ive			
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #14 Union/5th/I-880 NB Ramps	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	Comput (Futur	ation Repo e Volume A	rt lternat			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Le 1994 HCM Ope	Level Of perations ************************************	Level Of Service Computa HCM Operations Method (Future Tth/I-880 NB Ramp/Frontage Rd	Computal Future	Service Computation Report Method (Future Volume Alternative) amp/Frontage Rd.	ernativ	* * * * * * * * * * * * * * * * * * * *	
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 3c): 11 (Y+ 3: 71	Critical Vol./Cap. (X) (Y+R = 4 sec) Average Delay (sec/veh Level Of Service:	Critic Averag Level	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	p. (x): ec/veh):		.151 17.3 C	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 (Y+	(Y+R =	4 sec) 7	ritica verage evel O	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	(X): /veh):	0.509 23.3 C	ون د. د.
Approach: Movement:	North Bound L - T -	• e	South Bound	East Bound	Bound - R		ound - R	Approach: Movement:	H	nd R	South Bound L - T -	und - R	East Bound	und .	West Bound	ound - R
Control: Rights:	red 1de		red	 Sp1	it Phase Include	Split	hase ude	Control: Rights:	į į H	• .	: 50	1	5 H	1	rot	1
Min. Green: .Lanes:	0 20	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20 20 1 1 0	10 20	1 0		1 0	Min. Green: Lanes:	10 20 1 0 1 1	0 0	10 20 1 0 0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10 20	0 0 0	0 20	1 0 .
Volume Module:		<u>:</u>	;	<u>:</u>	-		:	Volume Module:		-			:	= '	;	:
Base Vol: Growth Adi:	1.00 1.00 1.00	45 0 154 00 1.00 1.00	54 31	1.00 1.00	3 13	1.00 1.00	115	Base Vol: Growth Adi:	0 548 1.00 1.00	21.00	17 001.00	1.00	0 16 1.00 1.00	1.00	0 62	1.00
Initial Bse:		00		24.		205		Initial Bse:		21		94		0 0		
PasserByVol:	• •	0				0		PasserByVol:		0		0		0		0
Initial Fut:	175		54 31	24		358 31	115	Initial Fut:	564 548	21	17 00	369	227 18	0 6	00 1.00 1	- 60
PHF Adj:		1.00			00.1	1.00.1		PHF Adj:	1.00			1.00	1.00 1.00	00.		
PHF Volume:	0 175 2	0 15	31	24	3 13	358 31	115	PHF Volume:	564 548	21	17 0	369	227 18	00	0 70	H C
Reduced Vol:	175	0 15	m	24 4	ч	358 3		Reduced Vol:	54	21		369	227 18		0 70	
PCE Adj:				1.00		1.001		PCE Adj:	1.00		1.00 1.00	1.00	1.00 1.00		1.00 1.00	
MLF Adj: Final Vol.:	1.00 1.10 1.10 0 193 299	299 0 162	1.05	1.05 1.05 25 45	5 1.05	358 31	115	Mur Ad): Final Vol.:	1.00 1.05 564 575	22	17 0	417	227 18	0.1	1.00 1.05 0 74	1.05
							-			=						
Saturation Flow Module: Sat/Lane: 1900 1900	low Module: 1900 1900 1900			1900 1900	0 1900	1900 1		Saturation Fi Sat/Lane:	1900 1900		1900 1900	1900	1900 1900		1900 1900	1900
Adjustment:	1.00 0.91 0.91	91 1.00 0.97	0.97	0.96 0.96	6 0.96	0.95 1.00	0.85	Adjustment:	0.95 0.99	0.99	0.95 1.00	0.85	1.00 2.00	1.00	1.00 1.00	1.00
Sat.	0 2035	0		1086		1805		Sa	3623	_	1805 0	3230		_	0 3749	
Capacity Analysis Module:	lysis Module:	-	} ! ! ! !		; ; ; ;	-	 ! ! !	Capacity Analysis	ysis Module			-		=		-
Vol/Sat: Crit Moves:	0.00 0.09 0.09	0.00 0.00 60	5 0.05	0.02 0.02	2 0.02	0.20 0.02	0.07	Vol/Sat: Crit Moves:	0.31 0.16	0.16 (0.01 0.00	0.13	0.13 0.00	0.00	0.00 0.02	0.02
Green/Cycle:		0.00		0.20		0.47		••	0.37		0.19 0.00	0.34				
Volume/Cap:	0.00 0.42 0.42	42 0.00 0.24	4 0 . 24	11	2 0.12	11	0.15 	volume/cap:	0.88 0.43		00.0 60.0	0.38	10.0 88.0	00.0	0.00 0.10	0.10
Level Of Service Module: Delay/Veh: 0.0 21.7	rice Module: 0.0 21.7 21.7	.7 0.0 20.6		21.2 21.2	2 21.2	11.7 9.3	- 6.6	Level Of Service Module Delay/Veh: 28.6 15.3		15.3	21.6 0.0	16.1	45.7 14.0	-	0.0 21.1	
User DelAdj:		~				1.00 1	-	••	1.00		-	1.00	.00 1.00			
AdjDel/Veh: Oueue:	0.0 21.7 21.7	7 0.0 20.6	4 20.6	21.2 21.2 1.2	2 21.2	11.7 9.3	e. 0	AdjDel/ven: Oueue:	28.6 15.3 17 12	15.3	21.6 0.0	16.1	8 0 0	. 0	0.0 21.1	21.1
****	**********	*********	*****	******	*****	******	****	******	****	****	****		* * * * * * * * * * * * * * * * * * * *	* * * * * * * *	****	***

Table J.7-1 (Continued)

113		Ź	No Project Alternative AM Peak Hour	rt Vision 2000 oject Alterna AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	IR						-	FISCO/P No	FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour	on 2000 Alternat	EIS/EIR ive			
Intersection #16 7th/I-880 SB Ramp	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #16 7th/I-880 SB Ramp	evel O eration	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	Computa (Future	ation R e Volum	eport e Alter	native	. *		Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative) ***********************************	1994 H	Lex CM Unsig *******	Level Of Signalized	Service (d Method	Computal (Future	1994 HCM Unsignalized Method (Future Volume Alternative) ************************************	rt Alternat	ive)	
reference 100 Critical Vol./Cap. (X):	100		*	Critica	al Vol.	r*************************************	; (x	*	0.342	**************************************	****** lay (se	******* c/veh):	* * * * * * 2	2.5	.*************************************	**************************************	******* Level of	Service	* * * * * * * * * * * * * * * * * * * *
Loss lime (sec): Optimal Cycle:	35	. + . + .	 4 Sec) Average Delay (sec/ven) Level Of Service: 	Average Level (Average Delay (se Level Of Service:	'(sec/v ice:	.eu):		1.6 A	**************************************	******	*********** North Bound	****** Id	**************************************	******** vund	********** East Bound	******** 3ound	****	********** West Bound
***************************************	***************************************	***	*******	****	****	****	****		*****	Movement:		- -	۲ ۲	L - 1	: د ا	L - T	α	, ,,	H
Approach:	L - T	_ ≃	" ₋	æ	.a	East Bound	2	West Bound	ound - R	Control:		Uncontrolled	[-:	Uncontrolled	 olled	Stop Sign	Sign	Stol	Stop Sign
Control:	Protected	ed	Protected	ted	:	Protected	<u>-</u> - - -	Protected	 ted	Rights: Lanes:	0	Include 0 1 1	0	Include	ide o o	Include	ude 0 0	1 0 T	Include 0 0
Rights: Min. Green:	Include	g e	Include	nde	c	Include		Include	nde	-		:	=	!			•	-	!
Lanes:	0	000	0	0	0				0	Base Vol:	0	0	83	30 0	0	0	0 0	140	0
					<u></u>			!		Growth Adj:	1.00	1.00		1.0	1.00	1.0	٦.0	Н	.00 1.00
Volume Module: Base Vol:	0	0	0	0	0	0	0	65 0	c	Initial Bse: Added Vol:		227	68	30 0	0 0	0 0	0 0	140	0 0
	1.00 1.00	1.00	1.00 1.00	1.0	1.00		1.00 1.	00 1.0	1.0	PasserByVol:			0		0			0	0
Initial Bse:		0			0		0			Initial Fut:		227		30 275	0	0		140	
Added Vol: December	0 0	0 0	0 0	0 0	0 0	229	495	0 847		User Adj:	1.00	1.00			1.00	1.00 1.00		1.001	
Initial Fut:		0			0		495	65 847		PHF Volume:	00.1	227	00.4	1.00 1.00 30 275	00.1	00.1.00.1	1.00	1.00 1	1.00 1.00
	1.00 1.00	1.00	1.00 1.00	1.00	1.00		1.00 1.	00	1.0	Reduct Vol:			, 0		0				0
	1.0	1.00	1.0	1.0	1.00		1.00 1.	00	1.0	Final Vol.:	0	227	68	30 275	0			140	0
PHF VOLUME:	0 0	0 0	0 0		0 0	229	495	65 847	0 (Adjusted Volume Module:	Jume M	odule:		;		•			
Reduced Vol:		• •			0 0		49.0	65 B47		Grade:		20 20	;		2	_			_
	1.0	1.00	1.0	1.0	1.00		1.00 1.	00	1.0	* Truck/Comb		XXXX XXXX	5 X	XXXX	XXXX	XXXX	XXXX	XXXX	× × × ×
	1.00 1.00	1.00	1.00 1.00		1.00			03		PCE Adj:		<u> </u>	00	ဗ	1.00	2	1.10	1.10 1.10	10 1.10
Vol.:	0	。		۰.	•	240	495	67 890		Cycl/Car PCE:		×	×	XXXXX	xxxx	XXXX	xxxx	XXXX	×
Caturation Blow Module:	w Module.			!	-		=	!		Trck/Cmb PCE:		•	× (×	XXX	XXX	XXX	XXXX	
Sat/Lane: 1	1900 1900	1900	1900 1900	1900	1900	1900	1900 190	000 1900	1900	Adj Vol.: Critical Gan Module:	o Lubow at	777	χ Σ	33 275	D	0	0	154	0
 	1.00 1.00	1.00	1.00 1.00		1.00			Ñ		MoveUp Time:xxxxx xxxx xxxxx	xxxxxx:	xx xxx		2.1 xxxx	x xxxx	XXXX XXXXX XXXXX XXXX	XXXXX	3.4 x	xxxx 2.6
	0.	0.00	0.0	0.0	0.00			00		Critical Gp:xxxx xxxx	: xxxxx	xx xxx		5.5 xxxx	xxxxx	5.5 xxxx xxxxx xxxxx xxxxx	XXXXX		
	0	。 -	0	<u>.</u>	 o	3800 1	-	3800		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1111111							1
Capacity Analysis Module	sis Module					1 1 1 1 1 1				Capacity Module:	dule:	22.) 1 C					
Vol/Sat: 0	0.00 0.00	0.00	0.00 0.00	0.00	0.00	0.06 0	0.31 0.0	02 0.23	00.00	Potent Cap: xxxx xxxx	****	** ***	•	316 XXXX	XXXXX	****	XXXXX	0 / 6 X	XXXX 158
Crit Moves:								*		Adj Cap:	XXXX			XXX				0.97 cx	
	00.0		0.00 00.00		0.00			10 0.95		Move Cap.:	XXXX	xxxx xxxx xxxx		XXXX		xxxx xxxx			
Volume/Cap: 0.00	0.00 0.00	0.00 0.0	0.00 0.00	0.00	0.00	0.07 0	0.36 0.1	6	0.00										
Level Of Servi	Of Service Module:			_	=		=		_	Stopped Del:xxxx xxxx	: xxxxx	XXXX XX	xxxxx	3.2 xxxx	× xxxxx	XXXX XXXXX XXXX	XXXX	12.0 xx	xxxx 3.1
Delay/Veh:		0.0	0.0 0.0						0.0	LOS by Move:	*				•	*	*	ບ	
		1.00	-	-	-			0	1.00	Movement:	5			LT - LTR		LT - LTR	- RT	LT - LTR	TR - RT
Aujuer/ven: Onene.	0.0					» -	1.1 26.	0.1	o c	Shared Cap.: xxxx xxxx	XXXX			XXX		XXXX XXXX XXXX	XXXXX	xxxx xxxx	
************************	********	****	*****	****	*****	•	****	4 4 4 4	, .	toding priid		444	~~~~~	****	4	****	44444	YYYY YYYY	** ***

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1 1 1 1 1 1 1 1 1 1		1 1 1 1	FISC	SCO/Port	Vision	n 2000	EIS/EIR	SIR) 			
			4	o Pro	oject Altern AM Peak Hour	No Project Alternative AM Peak Hour	tive					
	994	HCM O	Level Of Operation	03 *	Service C Method (Service Computation Report Method (Future Volume Alteinative	tion Reg Volume	teport	ort Alternative)	ve)		
Intersection #18		W.Grand/I			Frontage Rd	Rd.		*	*****	*		
Cycle (sec):		100	_			Critical	Vol	Vol./Cap.	: (x)		0.434	
Loss Time (sec)	ec):	11	(Y+R	4	sec) A	Average Delay	je Dela) Of Serv	Service:	/veh) :		20.6	
	:		:						:		:	:
Approach:	NO	North Bound	pund	ĽĎ.	유	nnd		East Bound	pun		West Bound	
eme	പ	E ·			H	α	ا د.	F	~	ני	÷	æ
Control:		11. 19	ase		it Ph			otect	1	Prot	ect	70
Rights:		H	e c	;	Includ	d)	:	Includ	e e	,	Includ	e c
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	<u> </u>			-			:					:
Volume Module Base Vol:		0	0	678	48	v	65	234	12	0	152	449
Growth Adj:	1.00	1.0	1.00	1.00	1.0	1.00	1.00	1.00	1.00		1.00	1.00
Initial Bse:	6		0	678	4	9	65	234	12		152	449
Added Vol:	0 (151	76		185	0 (0 (134	0 (147	0
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Reduct Vol:	٥	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0		16	678		9	65	368	12		299	449
PCE Adj:	1.00	-	1.00	1.00	-	1.00	1.00	1.00	۰.		1.00	1.00
MLF Adj: Final Vol .	1.00	1.05	1.05	1.05	233	1.00	1.00	1.05	1.05	1.00 1.	329	1.10
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Saturation Fl	Iow M					•			•			
Sat/Lane:	1900		1900	1900	~	1900	1900	1900	1900	900	1900	1900
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	<u>:</u>							1 1 1 1 1				1 1
Capacity Anal	>-	Modul	 •									
Vol/Sat:	0.00	0.07	0.07	0.20	0.13	0.13	0.04	0.11	0.11	0.05 0.	.16	0.16
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Level Of Serv	rice P	Service Module		•		•						
Delay/Veh:	20.8	7	22.2	18.7	16.8	16.8	27.7	21.0	21.0		4.1	21.4
User DelAdj:	1.00	1.0	٠	•	•	1.00	•	1.00	1.00	0		1.00
7.07		6	33	100	9 7 1	9	27 7	0	0.10	27.0.21		21 4
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NOBLD-PM.CMD	Mon Nov 4, 1996 15:06:42	996 15:0	6:42			Page 1-1	Table J.7-2	J.7-2							
	FISCO/Port Vision 2000 EIS/EIR	on 2000	EIS/EIR	1			:	NOBLD-PM.CMD	Mon Nov 4, 1996 15:06:42	1996 15:	06:42		1 1 1 1	Page 1-2	1-2
	No Project Alternative PM Peak Hour	Alternat k Hour	ive	, , , , ,	1 1 1 1				FISCO/Port Vision 2000 EIS/EIR No Project Alternative	sion 2000 t Alterna	EIS/EIR				
	Trip Generation Report	tion Repo	ort							FM Feak Hour	1				1
	Forecast for PM Peak Hour	PM Peak	Hour					Zone # Subzone	Amount Units	Rate In	Rate	Trips In	Trips Trips In Out	Total Trips	f Of Total
Zone # Subzone A	Amount Units	Rate In	Rate	Trips Trips In Out		Total & Of Trips Total	* Of Total	Zone 2	Zone 28 Subtotal			. 374	447	821	21.7
1 FISCO 4 & 5 Zone 1 Su	200.00 Employees Subtotal	90.0	0.21	12	4 4 2 2	5.4 5.4	4.1.4.	TOTAL			1 .	1533	2247		3780 100.0
2 FISCO 1,2,3 500.00 Zone 2 Subtotal	500.00 Employees	0.06	0.21	30	105	135	3.6								
4 SP Rail Term 130.00 Zone 4 Subtotal	130.00 Employees abtotal	0.10	0.36	13	47	0 0 9	1.6 1.6		·						
5 UP Rail Term Zone 5 Su	82.00 Employees	0.10	0.36	60 60	30	38	1.0								
6 Middle Harbr 516.00 Zone 6 Subtotal	516.00 Employees bbtotal	0.06	0.22	31	114	145	. e. e.								
7 7th St Harbr 613.00 Zone 7 Subtotal	613.00 Employees	0.06	0.22	37	135	172	4.4. 6.6							-	
8 Outer Harbor 706.00 Zone 8 Subtotal	706.00 Employees btotal	0.06	0.21	42	148	190	5.0								
16 Middle Harbr Zone 16 S	e Harbr 1.00 Trucks Inter Zone 16 Subtotal	17.00	20.00	17	20	37	1.0			•					
17 7th St Harbr Zone 17 S	1.00 Trucks Inter Subtotal	20.00	24.00	20	24	4 4 4	1.2								
18 Outer Harbor Zone 18 S	1.00 Trucks Inter Subtotal	23.00	27.00	23	27	50	1.3								
24 SP Rail Term Zone 24 S	1.00 Truck External 2 Subtotal	1 213.00	13.00 255.00	213 213	255 255	468 468	12.4 12.4								
25 UP Rail Term Zone 25 St	1.00 Truck External 115.00 138.00 Subtotal	1115.00	138.00	115	138 138	253 253	6.7								
26 Middle Harbr Zone 26 S	1.00 Truck External Subtotal	27.	3.00 327.00	273 273	327 327	009	15.9 15.9								
27 7th St Harbr Zone 27 Sh	1.00 Truck External 325.00 388.00 Subtotal	1 325.00	388.00	325 325	388	713 713	18.9 18.9		•						
28 Outer Harbor	1.00 Truck External 374.00 447.00	1 374.00	447.00	374	447	821	21.7								
Traffix 6.8.1412	Traffix 6.8.1412 (c) 1995 Dowling Assoc. Licensed to Dowling Assoc.,	oc. Licen	sed to D	owling	Assoc.,	Oakland	nđ	Traffix 6.8.14	Traffix 6.8.1412 (c) 1995 Dowling Assoc. Licensed to Dowling Assoc., Oakland	soc. Lice	insed to	Dowling	Assoc	., oak]	land

Traffix 6.8.1412 (c) 1995 Dowling Assoc. Licensed to Dowling Assoc., Oakland

Table J.7-2 (Continued)

NOBLD-PM.CMD

## Peak Hour Report ## Peak Hour Pe	Northbound Southbound Eastbound Nestbound Turning Movement Report	Page 2-1		NOBLD-	NOBLD-PM, CMD		FIS	Mon Nor	Mon Nov 4, 1996 15:06:42 PISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	96 15:00 n 2000 lternal Hour)6:42 EIS/E	IR	 		Page 3-1	; ;
Interport Inte	The part of the		;	1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Turni	ng Move	ment Re Hour	port		 			; ; ; ;
	Hime Name	OV E	ΝĒ	lume		hbound		Southbo	ound . Right	Eas Left	tboun		Wes	tbound	d iaht 1	Total
	Lime/Althorner 192 0 0 0 0 0 0 0 0 0	•		247					,						1	
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1			#3 Mar Base	1t1me/Bu 5 5	rma 90			0		0	20	0	0	0	754
F 905 O 320 119 192 O 50 O O C 414 28 105 132 O O O O O C 414 28 105 132 O O O O O C 414 28 105 132 O O O O O C 414 28 105 132 O O O O C 413 O O O O O O C 5 413 O O O O O C 5 413 O O O O C 5 413 O O O O C 5 413 O O O O C 6 75 223 O O O C 75 223 O O O C 76 226 O O O C 75 223 O O O C 76 226 O O O C 76 226 O O C 76 226 O C 76 226 O C 76 226 O C 76 226 O C 76 226 O C 76 226 O C 76 227 O C 76 227 O C 76 227 O C 76 227 O C 76 227 O C 76 227 O C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 0 C 77 0 C	Fig. 14 Fig. 15 Fig. 15 Fig. 16 Fig. 16 Fig. 16 Fig. 16 Fig. 17 Fig.			Added		15			119	192	0	0	0	0	0	836
				Total		92			119	192	0	20	0	0	0	1590
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19 126 59 296 99 46 80 444 23 45 317 212 19 126 59 296 99 46 80 444 42 45 317 212 19 126 59 327 117 46 80 444 42 45 317 212 11e Harbor/Gate 2 11o 126 59 327 117 46 80 444 42 45 317 212 11e Harbor/Gate 2 11o 12	77th Ext. 77th Ext. 9		4 1	dded		13			- i	E (0 (13	0 0	0 0	0 0	863
7th Ext. 0	19 126 59 296 99 46 80 444 23 45 317 212 19 126 59 296 99 46 80 444 42 45 317 212 19 126 59 296 99 46 80 444 42 45 317 212 11	Ħ	Ħ	oral		<u> </u>			0	977	>	ν 0	>	>	>	1771
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117	line 'St./ 3rd St. line 'St./ 3rd St. line 'St./ 3rd St. 36			Added	, ,				0	0	206	~	34	169	0	536
line St./ 3rd St. 36 0 122 43 0 15 30 14 13 89 39 78 36 0 122 43 572 15 30 14 13 89 39 78 36 874 122 43 572 15 30 14 13 89 39 78 ritime/M.Grand/I-880 Ramps 0 23 0 9 23 23 20 454 210 0 624 13 366 23 140 9 23 23 20 454 434 106 624 13 311ne/Sth/I-880 SB Ramps 0 0 241 0 57 0 0 0 0 126 350 0 0 205 160 509 241 97 69 138 157 126 350 20 616 10n/Sth/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 194 281 0 144 30 0 0 0 0 0 255 0 0	line St./ 3rd St. 36 0 122 43 0 15 30 14 13 89 39 78 36 0 122 43 572 0 0 0 0 0 0 0 36 874 122 43 572 15 30 14 13 89 39 78 ritime/M.Grand/I-880 Ramps 0 23 140 9 23 23 20 454 106 0 0 366 23 140 9 23 23 20 454 106 624 13 366 23 140 9 23 23 20 454 106 624 13 31ine/5th/I-880 SB Ramps 0 0 0 241 0 69 138 157 0 0 0 0 0 205 160 509 241 97 69 138 157 126 350 0 0 100/5th/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 194 281 0 144 30 31 97 18 237 31 34			Dagger	_					0	0	176	264	0	0	733
line St./ 3rd St. 36	line St./ 3rd St. 36			Total					0	0	421	309	392	257	0	2121
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36 874 122 43 572 15 30 14 13 89 39 78 aritime/W.Grand/I-880 Ramps 0 23 0 9 23 20 454 210 0 624 13 366 0 140 0 0 0 0 224 106 0 0 366 23 140 9 23 23 20 454 434 106 624 13 361 140 9 23 23 20 454 434 106 624 13 361 140 9 241 0 69 138 157 0 0 202 616 205 160 509 0 97 0 0 0 126 350 0 0 205 160 509 241 97 69 138 157 126 350 0 0 205 160 509 241 97 69 138 157 126 350 202 616 205 160 194 281 0 144 30 31 97 18 32 31 34 20 0 0 205 0 0 0 0 0 0 0 0 0 205 0 0	36 874 122 43 572 15 30 14 13 89 39 78 aritime/W.Grand/I-880 Ramps 0 23 0 9 23 20 454 210 0 624 13 366 0 140 0 0 0 0 0 224 106 0 0 366 13 140 9 23 23 20 454 434 106 624 13 aleline/Sth/I-880 SB Ramps 0 0 0 241 0 69 138 157 0 0 0 0 205 160 509 0 97 0 0 0 126 350 0 0 205 160 509 241 97 69 138 157 126 350 202 616 nion/Sth/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 194 407 0 144 30 31 97 18 237 31 34			Added					0	0	0	0	0	0	0	1446
aritime/W.Grand/I-880 Ramps 0 23 0 9 23 23 20 454 210 0 624 13 366 0 140 0 0 0 0 0 224 106 0 0 366 23 140 9 23 23 20 454 434 106 624 13 1011ne/5th/I-880 SB Ramps 0 0 0 241 0 69 138 157 0 0 202 616 205 160 509 241 97 69 138 157 126 350 0 0 205 160 509 241 97 69 138 157 126 350 202 616 anion/5th/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 0 0 126 0 0 0 0 205 0 0	aritime/W.Grand/I-880 Ramps 0 23 0 9 23 23 20 454 210 0 624 13 366 0 140 0 0 0 0 0 224 106 0 0 366 23 140 9 23 23 20 454 434 106 624 13 4eline/5th/I-880 SB Ramps 0 0 0 241 0 69 138 157 0 0 202 616 205 160 509 241 97 69 138 157 126 350 0 0 205 205 160 509 241 97 69 138 157 126 350 202 616 110n/5th/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 194 407 0 144 30 31 97 18 237 31 34			Total		12			15	30	14	13	89	39	78	1925
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deline/5th/I-880 SB Ramps 0 0 241 0 69 138 157 0 0 202 616 205 160 509 241 97 69 138 157 126 350 0 0 205 160 509 241 97 69 138 157 126 350 202 616 nion/5th/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 0 126 0 0 0 0 0 205 0 0	deline/5th/I-880 SB Ramps 205 160 509 0 97 0 0 0 126 350 0 0 205 160 509 241 97 69 138 157 126 350 0 0 205 160 509 241 97 69 138 157 126 350 202 616 nion/5th/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 0 194 407 0 144 30 31 97 18 237 31 34	F	T	otal					23	20	454	434	106	624	13	2235
100/Sth/I-880 NB Ramps 0 0 1241 0 69 138 157 0 0 202 616 205 160 509 241 97 69 138 157 126 350 0 0 205 160 509 241 97 69 138 157 126 350 202 616 206 160 194 281 0 144 30 31 97 18 32 31 34 0 0 126 0 0 0 0 0 205 0 0	100/5th/I-880 NB Ramps 0 124 30 69 138 157 0 0 202 616 205 160 509 241 97 69 138 157 126 350 0 0 205 160 509 241 97 69 138 157 126 350 202 616 100/5th/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 0 194 407 0 144 30 31 97 18 237 31 34		4	4	(4 5 / C 4) (4 5)	7	9									
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205 160 509 241 97 69 138 157 126 350 202 616 205 160 509 241 97 69 138 157 126 350 202 616 nion/5th/I-880 NB Ramps 0 194 281 0 144 30 31 97 18 32 31 34 0 0 126 0 0 0 0 0 205 0 0	205 160 509 241 97 69 138 157 126 350 202 616 205 160 509 241 97 69 138 157 126 350 202 616 206 194 281 0 144 30 31 97 18 32 31 34 0 194 407 0 144 30 31 97 18 237 31 34			מסמני					n C	9 6) C	7 2	2 0 0	7 0	9	1446
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	0 194 407 0 144 30 31 97 18 237 31 34			Added	0				0	0	0	0	205	0	0	331

Zone

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Table J.7-2 (Continued)

Column C	NOBLD-PM, CMD	1.CMD			Mor	Nov	Mon Nov 4, 1996 15:06:42	15:	06:42				Page 3	3-2	NOBLD-PM.CMD	PM.CMD			Mon	Mon Nov 4, 1996 15:06:42	, 1996	15:06	6:42			ď,	Page 3-	ψ.
Control Cont		 		1 114 1 1 1 1	'ISCO'	Port Proj	Visior ect Al	2000 terna Hour	EIS/	EIR) 	! ! !		!	1 1 1 1 1		! !	. 14 ! !	No No	Port V Proje	ision ct Alt Peak H	2000 1 ernati	EIS/EI ive	æ	; ; ; ; ;		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
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#214 0 0 0 0 0-105 0 0 0-150 0 0 0-255 Base 0 0 0 0 0 0 0 0 0 0-350-391 0-0 0 0 0 0 105 0 0 150 0 0 256 Added 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total	0	0	0	0	0	0	0	0	0	0	0	0	- -1	Total		0	0	0	0	0	0	0	0	0	0	0-	0
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Table J.7-2 (Continued)

#215 Base	1		and the first of t		1					
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0 -39 0 0 -19 0 0 -47 0 0 0 -39 0 0 -47 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			Volume NB Link	SB Link		EB Link	ink	WB	WB Link	Total
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0 -0 0 0 0 -0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0		#4 Maritime/14th	-						
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0 0 0 0 0 302 226 44 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-37	-609								
		609	#12 Maritime/W.Grand/I-880 Ramps	.880 Ramps						
	0	0	233		111 6		1331		_	
			506 329							
			Total 529 562 1092	55 56	111 9	908 1013	1921	743 6(603 1346	6 4470
· ·			#13 Adeline/5th/I-880 SB	3B Ramps						
			Base 0 0 0	310 754	1064 2	295 271	995	818 39	398 1216	
			Added 874 572 1446	97 160	257 1	126 205	331	350 509	958 6	8 2892
			874	407 914	1321 4	421 476	897	1168 90	907 2074	1 5738

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Table J.7-2 (Continued)

NOBLD-PM.CMD	1.cMD		1	MOI	n Nov	Mon Nov 4, 1996 15:06:42	96 15	:06:42	~			Page	4 - 2	NOBLD-PM.CMD	PM.CMD			W O	Mon Nov	4, 199	1996 15:06:42	6:42			Д.	Page 4-	ú
				FISCO	/Port o Proj	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	n 200	0 EIS/ ative	/EIR									FISCO	/Port > Proj PM	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	2000 ternat Hour	EIS/El ive	IR				! ! !
Volume Type	Z O	NB Link Out Total	k otal	i i	SB Link Out Total	ık Total	Ë	EB Link Out To	EB Link Out Total	E E	WB Link Out To	nk Total	nk Total Total Volume	Volume Type	u u	NB Link Out To	ink Total	Ħ	SB Link Out Total	ik 'otal	I H	EB Link Out Total	k otal	M uI	WB Link Out To	tal V	Total olume
#15 7th/I-880 NB Ramp/Frontage Rd Base 200 0 200 207 198 Added 391 0 391 181 258 Total 591 0 591 388 456	/I-880 200 391 591	N O O O	amp/Frd 200 391 591	ontage 207 181 388	e Rd. 198 258 456	405 439 844	108 264 372	258 574 832	366 838 1204	5. 2. 3.	113 6 119	167 8 175	1138 1677 2815	#165 Base Added Total	000	0- 099 099-	0- 099 099-	-126 126 -0	000	-126 126 -0	-534 534 -0	000	-534 534 -0	000	000	000	-1320 1319 -1
#16 7th/I-880 SB Base 0 385 Added 0 534 Total 0 919	/I-880 0 0	SB Re 385 534 919	Ramp 385 534 919	000	000	0.00	7 798 805	574 574	7 1372 1379	378 574 952	0 264 264	378 838 1216	770 2745 3515	#170 Base Added Total	-596 597 1	000	-596 597	000	-205 205 0	-205 205 0	000	000	000	000	-391 - 391 0	-391 391 0	-1192 1193 1
#17 14th/I-880 Frontage Base 192 115 307 Added 258 181 439 Total 450 296 746	192 192 258 450	80 Fror 115 181 296		Rd. 4 181 185	69 258 327	73 439 512	000	000	000	122 0 122	134 0 134	256 0 256	636 878 1514	#177 Base Added Total	000	-214 214 0	-214 214 0	-214 214 0	000	-214 214 0	-163 163 -0	000	-163 -163 -0	000	-163 - 163 -0	-163 163 -0	-754 755 1
#18 W.Grand/I-880 Base 147 3 Added 258 181 Total 405 184	rand/I 147 258 405		Frontage Rd 150 765 439 121 589 886	ge Rd. 765 121 886	488 173 661	1253 294 1547	366 140 506	537 106 643	903 246 1149	786 166 952	1036 225 1261	1822 391 2213	4128 1369 5497	#178 Base Added Total	-323 323 -0	000	-323 323 -0	000	-439 439 -0	-439 439 -0	-163 163 -0	000	-163 163 -0	000	-47 0	-47 47 0	-972 972 -0
#138 Base - Added Total	-168 - 168 0	-123 . 123 0	-291 291 0	-147 147 -0	-188 188 0	-335 335 0	20 0	-24 24 -0	44 44 0	000	000	000	-670 670 0	#182 Base Added Total	-439 439 -0	000	-439 439 -0	-297 - 297 0	-439 439 -0	-736 736 0	000	- 297 297 0	-297 297 0	000	•	000	-1472 1472 0
#158 Base - Added Total	-422 422 0	. ,	-422 422 0	000	-259 259 0	-259 259 0	000		000	000	-163 163 -0	-163 163 -0	- 844 844 0	#201 Base Added Total	000	000	000	000	000	000	-1043 1043 -0	0 0 0	-1043 1043 -0	000	-1043 - 1043 1 -0	-1043 1043 -0	-208 2085 -1
#159 Base - Added Total	-259 259 0	• • • •	-259 259 0	000	000	000	000	-364 365	-364 365	-105 105 0	000	-105 105 0	-728 729 1	#204 Base Added Total	000	0- 999 - 0	. 899- 899-	-1043 1043 -0	000	-1043 1043 -0	000	000	000	000	-375 375 -0	-375 - 375 -0	-2086 2085 -1
#160 Base Added Total	000	-105 . 105	-105 105 0	000	000	000	000	-259 259 0	-259 259 0	-364 365	000	-364 365	-728 729 1	#207 Base Added Total	-463 463 0	000	-463 463	000	-741 741 0	-741 741 0	000	000	000	-278 278 -0	000	-278 - 278 -0	-1482 1482 0
#161 Base Added Total	000	-255 - 256 1	255 . 256 . 1	-105 105 0	000	-105 105 0	-150 150 0	000	-150 150 0	000	000	000	-510 511 1	#214 Base Added Total	000	-350 350 -0	-350 350 -0	000	000	000	000	-391 - 391 0	-391 391 0	-741 741 0	000	-741 741 0	.1482 1482 0

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NOBLD-PM.CMD	4. CMD			W	n Nov	Mon Nov 4, 1996 15:06:42	6 15:0	16:42			-	Page 4	4-4	NOBLD-PM.CMD Mon	Mon Nov 4, 1996 15:06:42	:42	Page 5-1
1 1 1 1 1 1	! !	1 1 1 1 1	; ! !	FISCO	/Port Vi	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	2000 ternat Hour	EIS/E	SIR	1 1 1 1 1	! ! ! !	1 1 1 1	! ! ! !	FISCO/F	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	IS/EIR ve	
Volume Type	NO	NB Link Out To	ink Total	=	SB Link Out To	ink Total	a u	EB Link Out Total	uk Potal	In C K	WB Link Out To	ta1 V	Total	Imp	Impact Analysis Report Level Of Service		1 1 1 1 1 1 1 1 1 1 1
#217														Intersection	Base Del/	Future / Del/	Change in
Base Added	00	-19	-19	-19	00	-19 19	-47	00	-47	00	-47	-47	-132 132	# 3 Maritime/Burma	LOS Veh C B 7.2 0.211	C LOS Veh C 11 B 9.9 0.305	+ 2.740 D/V
Total	0	0.	0	0	0	0.	0	0	0	0	0	0	0 -	# 4 Maritime/14th	C 15.9 0.392	92 C 19.7 0.728	+ 3.786 D/V
#218 Base	-39	0	-39	0	-70	-70	-47	0	-47	0	-16	-16	-172	# 5 Maritime/7th Ext.	B 6.0 0.156	56 B 10.6 0.313	+ 4.678 D/V
Added Total	99	00	99	00	70 -1	-1	0 0	• •	7 0	00	16	16	172 -0	# 6 7th/7th Ext.	B 5.8 0.018	18 C 18.6 0.399	+12.831 D/V
#219												•		# 7 Middle Harbor/Gate 2	в 13.5 0.296	96 C 19.4 0.756	+ 5.938 D/V
Base	70	0 0	-70	00	-70 70	-70 70	00	ណុ ហ ។		လ် လ	000	د ت	-150 148	# 8 Adeline St./ 3rd St.	C 19.2 0.084	34 D 38.1 0.613	+18.979 D/V
Total	7	0	-	0	-	-1	0	0	0	0	o	9	7-	# 12 Maritime/W.Grand/I-880 Ramps	ps B 12.4 0.237	37 C 18.6 0.415	+ 6.228 D/V
#220 Base	0 (-19	-19	-37	0 (-37	0 (-23	-23	សុ	0 0	ហ្គ	. 48.	# 13 Adeline/5th/I-880 SB Ramps	C 17.5 0.328	28 C 20.4 0.522	+ 2.917 D/V
Added Total	00	19	6 -	-0	00	- 0	0	-0	-0	n 0	00	0-		# 14 Union/5th/I-880 NB Ramps	B 12.5 0.178	78 C 16.3 0.214	+ 3.865 D/V
#225	•	,	•	•	ı	1				6			1	# 15 7th/I-880 NB Ramp/Frontage Rd	Rd. B 11.2 0.079	79 C 19.2 0.417	4 7.984 D/V
Base Added	000	000	000	000	າທຸ	ນຸດເ	000	278	278	282	,	282	565	# 16 7th/I-880 SB Ramp	A 2.6 0.113	l3 B 6.3 0.466	+ 3.742 D/V
	•	•	•	•	,	,	•	,	•	1	,	•	•	# 17 14th/I-880 Frontage Rd.	A 1.9 0.000	00 C 1.8 0.000	+ 0.000 V/C
#226 Base Added Total	000	000	000	-16 16 0	000	-16 16	-375 375 -0	000	-375 375 -0	0 0	91 91	-391 391 0	-782 782 0	# 18 W.Grand/I-880 Frontage Rd.	C 21.1 0.505)S C 21.6 0.614	+ 0.458 D/V
#244 Base Added Total	000	000	000	302	-226 226 0	-528 528 0	-270 - 270 0	-339 339 0	0 609 609-	-37 37 0	44 0	81 0	-1218 1219 1				

NOBLD-PM.CMD		Mor	Mon Nov 4, 1	1996 15:06:42	:06:42			Page	6-1	NOBLD-PM.CMD		Mon Nov 4, 1	1996 15:	15:06:42	,	Page 7	·
1 1 1 1 1 1 1 1 1 1	; 1 1 1 1 1 1 1	FISCO/	FISCO/Port Vision 2000 BIS No Project Alternative PM Peak Hour	t Vision 2000 oject Alterna PM Peak Hour	o EIS/EIR ative		t 	, 	: : : : :		· 5	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	t Vision 2000 oject Alterna PM Peak Hour	EIS/EIR tive			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	Level Of Service 1994 HCM Operations Method ************************************	Level Of peration ********	Of Service Computation Report Lons Method (Future Volume Alt	Computa (Future	Computation Report (Future Volume Alternative	port	native *****	* * *			Level Of 1994 HCM Operation ************************************	1 0 Z *	Computa (Future	rvice Computation Report ethod (Future Volume Alternative)	t. ternativ	(e) **	# #
<pre>cycle (sec):</pre>	100 (c): 8	**************************************	4 sec)	Critica Average Level (critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	/Cap. ((sec/v (ce:	(X): veh):	# 0 # 4 # *	******** 0.305 9.9 B	Cycle (sec): Loss Time (sec): Optimal Cycle:	*	4 se	Critica Average Level C	Critical Vol./Cap. (X): c) Average Delay (sec/veh): Level Of Service:	(X): c/veh):	0.728 19.7 C	
**************************************	North Bound L - T - R	ound - R	South Bound	* 24	East Bound L - T - R	********* East Bound	* p	**************************************	ound - R	**************************************	North Bound L - T - R	*	ound - R	South Bound East Bound T - T L - T -	******** ound - R	West Bound L - T - R	, a
Control: Rights:	Protected Include	ted ude 20	 Protected Include 10 20	ted tude	Pr Pr	Protected Include	20	Protected Include	ted	Control: Rights: Min. Green:	Protected Include	Protected Include	ted ude	Permitted Ovl	tted 20	Permitted Include	20 S
Lanes:	_ :	-		-		0	0 :	0 0 0	0 0	Lanes:	1 0 1 1 0	1 0 1	1 0	0 0 11	0	1 0 0 1	0 :
Volume Module	.: 590		. 0 109	0		0	20	0	0	Volume Module Base Vol:	: 0 414	28 105 132	0			0	290
Growth Adj: Initial Bse:		1.00	1.00 1.00 0 109	1.00	1.00	1.00	1.00 1	1.0	0 1.00	Growth Adj: Initial Bse:	1.00 1	1.00 1	ri H	1.0	-	1.00	1.00
Added Vol: PasserByVol:	0 315	00	0 211	1119	192	00	00	00		Added Vol: PasserByVol:	229 187 0 0						00
Initial Fut:	5 905	0 6	0 320	119	192	1.00	50	1.0	0 0	Initial Fut: User Adi:	229 601 28 1,00 1.00 1.00	28 105 252 00 1.00 1.00	1.00	128 0 1.00 1.00	303	92 0 1.00,1.00	290
PHF Adj:	1.00 1.00		1.00 1.00		1.00		1.00			PHF Adj: PHF Volume:	1.00	1.00		1.00 1.00 128 0		1.00 1.00 92 0	1.00
Reduct Vol:		00			192	00	0 6		00	Reduct Vol: Reduced Vol:	0 0 229 601	0 0 0 28 105 252	91	0 0	303	92 0	290
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Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 0.95 1.00 Lanes: 1.00 2.00 Final Sat.: 1805 3800	low Module: 1900 1900 0.95 1.00 1.00 2.00	1900	1900 1900 1.00 0.96 1.00 1.46 1900 2659	1900 5 0.96 5 0.54 9 989	1900 0.95 1.00 1805	}		900 1900 .00 1.00 .00 0.00	190	Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 0.95 0.99 Lanes: 1.00 1.91 Final Sat.: 1805 3597	low Module: 1900 1900 0.95 0.99 0.99 1.00 1.91 0.09 1805 3597 165	1900 1900 1900 1900 1900 1900 1000 1.47	1900 0.96 0.53	1900 1900 0.51 1.00 0.30 0.00 288 0	1900 0.51 0.70 682	1900 1900 0.40 1.00 1.00 0.00 760 0	1900 0.85 1.00 1615
Capacity Analysis Module: Vol/Sat: 0.00 0.25 0 Crit Moves: **** Green/Cycle: 0.24 0.62 0 Volume/Cap: 0.01 0.40 0	lysis Modul 0.00 0.25 0.24 0.62 0.01 0.40	1e: 0.00 0.00	0.00 0.13 0.00 0.48 0.00 0.26	3 0.13 8 0.48 6 0.26	0.11	00.00	0.03 0 **** 0.20 0	00 0 00 00 00 00 00 00 00 00 00 00 00 0	00.00	Capacity Analysis VOJ/Sat: 0.13 Crit Moves: **** Green/Cycle: 0.16 Volume/Cap: 0.79	lysis Module: 0.13 0.18 0.18 **** 0.16 0.24 0.24 0.79 0.73 0.73	8 0.06 0.10 **** 4 0.12 0.20	0.10	0.44 0.00 **** 0.56 0.00 0.79 0.00	0.44	0.12 0.00 0.56 0.00 0.22 0.00	0.18 0.56 0.32
Level Of Service Module: Delay/Veh: 18.7 6.3 0.0 0.0 10.0 10.0 24.3 0.0 21.4 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	ervice Module 18.7 6.3 ij: 1.00 1.00 :: 18.7 6.3	0.0 1.00 0.0	0.0 10.0 1.00 0.0 10.0 0.0 10.0 0.0 10.0	0 10.0	24.3 1.00 24.3	0.0	21.4	0.0 0.0	0.0000000000000000000000000000000000000	Level Of Service Module Delay/veh: 35.7 24.8 User DelAdi: 1.00 1.00 AdiDel/veh: 35.7 24.8 Queue: 7 17	7.ce Module: 35.7 24.8 24.8 1.00 1.00 1.00 35.7 24.8 24.8 7 17 1	8 27.9 23.4 10 1.00 1.00 8 27.9 23.4 1 3 7	23.4	16.7 0.0 1.00 1.00 16.7 0.0	1.00	7.2 0.0 1.00 1.00 7.2 0.0	7.7 1.00 7.7 4

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		FISCO	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	on 2000 Alterna c Hour	EIS/EI		 					FISCO	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	1 2000 ternat: Hour	EIS/EIR ive			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	1 1994 HCM Op	evel 0 eratio	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Computa (Future	tion Re Volume	port Alter	native	*	*	Level 1994 HCM Operat ************************************	Level Of Service 1994 HCM Operations Method ************************************	Level Of Operations		mputat: uture 1	ervice Computation Report Method (Future Volume Alternative)	ernativ	***	:
INCERBECTION #5 MAITITME//UN EXC.	#5 Maricin	ne//cn	EXC.	*****	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	*****	*****	********	INCELSECCION #0 / CN / CN EXC.	#0 /CII//CI	* EXC.	**********	****	************	* * * * * *	*****	*******
Cycle (sec):	5			Critica	Critical Vol./Cap. (X):	Cap. (:: (x)	0	0.313	Cycle (sec):	10	1		itical	Critical Vol./Cap.	:: X	0	0.399
Loss Time (sec): Optimal Cycle:	4	8 (Y+R #	4 sec)	Average Level O	Average Delay (se Level Of Service:	(sec/v ce:	eh):	Ä	10.6 B	Loss Time (sec): Optimal Cycle:		(Y+R	= 4 sec) Av	Average L Level Of	sec) Average Delay (sec/ven) Level Of Service:	. (uev)	•	ه. ا
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					-		<u>-</u> 	1 1 4 1								=		
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User Adj:	1.00 1.00	1.00			1.00 1.00		1.00 1.	7		User Adj:		1.00					1.00.1.00	
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MLF Adj:	1.00 1.05	1.05	1.00 1.05		1.001			00 1.00		MLF Adj:	1.00 1.05	1.05	1.05		1.00 1.10		1.00 1.05	
Final Vol.:	41 434	0	0 443	80	226	0	93	0		Final Vol.:	19 132	62	327 122	48	80 488	46	45 333	13 212
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1354		FISC	O/Port Vision 2 No Project Alte PM Peak Ho	1000 EIS/EIR Trnative						FISCO/ No	Port Vision Project Al	2000 EIS ternative Hour	S/EIR	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	; ; ; ; ;	
The field 10 The	199 ***********************************	Level 4 HCM Operati ************************************	Of Service Components Method (Fut	utation Report	ernative)			Intersection	1994 HCM OF	eration	Service Col	mputatior uture Vol	Report	rnative		; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
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Of Service Module: Veh: 12.1 0.0 18.9 0.0 0.0 0.0 0.0 23.4 23.4 25.3 6.4 0.0 Delay/Veh: 37.1 37.1 46.3 46.3 46.3 21.0 21.0 22.0 22.0 class of the control o				20.0	=	0 0.12		-		-1-	0.97	_	0.08	_		
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1994 HCM Operations Method (Future Volume Alternative) 1994 HCM Operations Method (Future Volume Alternative) 1906 1907 1908	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour	1
Sec): 100 (Y+R = 4 sec) Critical Vol./Cap. (X): 0.415 North Bound South Bound East Bound West Bound Level of Service: 1.		Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	! # ·
North Bound South Bound East Bound West Bound L - T - R L - T - T L - T - T L		100	0.522 20.4
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1.00 0	0 0 0 0 0 224 106 0	Added Vol: 205 160 509 0 97 0 0 0 126 35	350 0 000 0 0
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1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Initial Fut: 205 160 509 241 97 69 138 157 126 39	350 202 616
366 23 140 9 23 23 20 454 434 106 624 13 1 36 23 140 9 23 23 20 454 434 106 624 13 1 36 23 140 9 23 23 20 454 434 106 624 13 1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
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1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	9 23 23 20 454 434 106 624 1	Reduce Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 8 8 8 8	350 202 308
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1) ysis Module: 0.10 0.10 0.10 0.00 0.03 0.03 0.01 0.18 0.18 0.06 0.18 0.18 1.0.21 0.27 0.27 0.14 0.20 0.20 0.16 0.37 0.37 0.12 0.33 0.33 0.50 0.36 0.04 0.13 0.13 0.07 0.50 0.50 0.50 0.54 0.54	1805 884 884 1805 2710 2591 1805 3720	Sat.: 1805 1900 1615 1805 2085 1487 1788 1989 1586	1805 1370 2088
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rvice Module: 22.9 19.1 19.1 24.2 21.2 21.2 22.9 15.8 15.8 28.2 18.2 18.2 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.04 0.13 0.13 0.07 0.50 0.50 0.50 0.54	0.54 0.42 0.62 0.64 0.24 0.24 0.52 0.53 0.53	0.51
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Project Attendative Project Attendative Project Attendative Project Attendative Project Attendative Project Attendative Project Attendation Report	199 ***********************************	FI Leve 94 HCM Opera	SCO/Port Vi	sion 2000 t Alterno	O EIS/EIR	: : : : :	1 1 1 1 1 1 1	; ; ;		1 1 1 2 1 1 1 1 1 1	FISCO/Po No P	rt Vision 2	000 EIS/E rnative	IR	1 1 1 1 1 1 1 1 1	1 1 1 1 1
9. Here Octobr	Intersection #: Cycle (sec): Loss Time (sec	Leve 94 HCM Opera		:	ative							PM Peak Ho	ur			
The property The	Intersection #1 *************** Cycle (sec): Loss Time (sec	*********	1 Of Servic tions Methor	e Computa d (Future	ation Report	ernativ	(O) **	;		1 *	vel Of S rations	ervice Comp Method (Fut	utation R ure Volum	eport e Alterna	tive)	, *
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Project Alectronalism	1 1 1 4 4 5 4 1 1 1 1 1) 									-							
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100	**************************************	L 994 HCM Op **********	evel Of eratior	Service 18 Method	Comput (Futur	ation R e Volum	report	native		1 40 41 41 41 41 41 41 41 41 41 41 41 41 41	Intersection	Leve 994 HCM Unsign ************************************	1 Of Servalized Me	rice Comput thod (Futu r***********************************	ation Report re Volume Al	ternativ	(e) * * * * * * * * * * * * * * * * * * *	
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Notice Protected Protect	Loss Time (se	::	(Y+R.		Averag	e Delay	/ (sec/	/eh) :	~	m :	* * * * * * * * * * * * * * * * * * * *	**************************************	*******	th Bound	East BO	und	West Bo	buno
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The strict of th	Sat/Lane:	1900 1900	1900	1900 190		1900			100 T 100		Movello Time	WOGGTE:		XXXXX XXXX	: xxxx xxxxx	XXXXX		
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t: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Capacity Ana.	lysis Modul	 •								Chflict Vol:	XXXX XXXX		XXXX XXXX		XXXXX		-
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$egin{array}{cccccccccccccccccccccccccccccccccccc$	User DelAdj:	1.00 1.00	1.00	_	-	1.00	1.00		00		Movement:				LI - LIK		LI - LIR	, 5
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Critical Vol./Cap. (X): Level Of Service: ound	tersection	1994 }	HCM Op	evel C eratic	ons Mel	vice C thod (Computa Future	tion l	Report	ernati	:	
North Bound South Bound East Bound L	cle (sec): ss Time (s	ec):	100 11 81	(Y+R	4	sec) A	ritica verage evel 0	L V	/Cap. / (sec /ice:	(X): /veh):	7 . 7	.614 21.6 C
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	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail AM Peak Hour	2000 Rail four	EIS/EIR Alternative	tive				Maxim	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna AM Peak Hour	EIS/EIR Alternative	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
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	Forecast for AM Peak Hour	AM Peak	Hour					Zone # Subzone Amount	Rate Rate Units In Out	Trips In	gd	Total & Of Trips Total
Zone # Subzone	Amount Units	Rate	Rate Out	Trips In	Trips	Total % Of Trips Total	* Of Total	Zone 28 Subtotal		331	352	683 11.1
1 New Harbor Zone 1	1018.00 Employees Subtotal	0.26	0.05		51 51		5.1	TOTAL		3361, 2	2811	6172 100.0
3 J.I.T. Zone 3	360.00 Employees Zone 3 Subtotal	0.40	0.09	144	32	176 176	2.9					
6 Middle Harbr Zone 6	r 516.00 Employees Subtotal	0.26	0.05	134	26 26	160	2.6					
7 7th St Harbr Zone 7 St	t Harbr 613.00 Employees Zone 7 Subtotal	0.26	0.05	159	31	190	3.1					
8 Outer Harbor Zone 8	Harbor 706.00 Employees Zone 8 Subtotal	0.26	0.05	184	35 35	219	3.5					
10 New Park Zone 10	1.00 Total Trips 0 Subtotal	15.00	15.00	15	15	30	. 5.0				•	
11 New Harbor Zone 11	1.00 Trucks Inter 1 Subtotal	248.00	248.00 264.00	248	264 264	512	8 8 					
16 Middle Harbr Zone 16	r 1.00 Trucks Inter 6 Subtotal	125.00	125.00 133.00	125	133	258 258	2.4					
17 7th St Harbr Zone 17	r 1.00 Trucks Inter 7 Subtotal	149.00	149.00 159.00	149	159	308	5.0					
18 Outer Harbor Zone 18	r 1.00 Trucks Inter 8 Subtotal	172.00	172.00 183.00	172	183	355 355	გ. დ. დ. დ.					
21 New Harbor Zone 21	1.00 Truck External	•	476.00 508.00	476	508	984 984	15.9 15.9					
23 J.I.T. Zone 23	1.00 Truck External 431.00 459.00 Subtotal	1 431.00	459.00	431	459 459	890	14.4					
26 Middle Harbr Zone 26	r 1.00 Truck External	•	241.00 257.00	241	257	498	8.1					
27 7th St Harbr Zone 27	t Harbr 1.00 Truck External 287.00 306.00 Zone 27 Subtotal	1 287.00	306.00	287	306	593	9.6				,	
28 Outer Harbor	r 1.00 Truck External 331.00 352.00	1 331.00	352.00	331	352	683	11.1					
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#6 7th		7th S	St./ 7th St. Extension	ensior			•					;	,	Added	0	614	614	0	0	0					80	00	4027
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#8 Adeline St./ 3rd St	line :	St./3	rd St.	i			:				•	1	į	Added		354	668	195		35	9	82	147				1629
Hase	3.9	97 65	1700	25.00	40 6	116	T C		136	165	9	528	8696	Total	322	414	737	927	678	1605	376	249	625	842 11	1126 19	1968	4935
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														Base	0	0	0	0	0	0	0	0	0	0	0	0	0
#9 7th/Middle Harbor Rd	/Middl	le Har	bor Rd											Added	694	739	1433	0	0	0	491	575 1					4998
Base	0		0	0	-	-	0					7	7	Total	694	739	1433	0	0	0			1066 1	1314 11	1185 24		4998
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#10 New Harbor/Mid Harbor	, Harb	or/Mi	d Harb	or Rd										Added	9CT-	5/1-	675-	י האדי	081-	6/5-	47- C	97-	05-	-	0 0	0 0	-758
Base	0	•	0		0	0	0	0	•	0		0	0	Total		-173			-180	379	-24	-26	-50	, c			-75B
Added	823	98	1812	0	0	0	365	34	7	64	495	1140	3666))	,		1)	•	•		2
Total	823		1812	0	0	0	365			645	49	1140	3666	#158													
														Base	-309	0	-309			-180	0	0	0	0 -12	29 -12	29	-618
#12 Maritime St./	ritime	e St./		W.Grand Ave	`:	8	sdwi					,		Added	327	0	327	0	0	210	0	0	0	0	80	118	654
Base	33		499	91	96	#	880		-	173	٠.	719	2626	Total	18	0	18	0	30	30	o ,	0	0		-111	-11	36
Added	363	565	928	0	0		483		781	82	9	147	1855														
Total	396	396 1031	1427	16	06	181	1363	645	2008	391	47	866	4481														

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			Maxi	FISCC mum Ma)/Port rine/	FISCO/Port Vision 2000 EIS/EIR um Marine/Maximum Rail Alterna AM Peak Hour	on 200 um Rai k Hour	00 EIS	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour	ve						; ; ; ; ;	; ; ; ;	Max	FISC imum Ma	J/Port	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna AM Peak Hour	n 2000 m Rai		EIS/EIR Alternative	Į Į			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1
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#159 Base Added Total	-180 210 30	000	-180 210 30	000		000	000	-358 382 24	-358 382 24	-178 173 -5	000	-178 173 -5	-716 764 48	·	#204 Base Added Total	000	-580 655 75	-580 655 75	-932 1047 115	000	-932 1047 115	000	000	000	000	-352 392 40	-352 392 40	-1864 2093 229	M D
#160 Base Added Total	000	-178 173 -5	-178 173 -5	000	000	000	000	-180 210 30	-180 210 30	-358 382 24	000	-358 382 24	-716 764 48		#207 Base Added Total	-714 831 117	000	-714 831 117	000	-1110 1261 151	-1110 1261 151	00	000	000	396 430 34	000) -396 430 34	5 -222 2523 303	~ ~ ~
#161 Base Added Total	000	-464 535 71	-464 535 71	-178 173 -5	000	-178 173 -5	-286 363 77	000	-286 363 77	000	000	000	-928 1071		#214 Base Added Total	000	-546 554 8	-546 554 8	000	000	000	000	-564 707 143	-564 707 143	-1110 1261 151	000	-1110 1261 151	-2220 2523 303	0
#165 Base Added Total	000	-722 878 156	-722 878 156	-227 264 37	000	-227 264 37	-495 614 119	000	-495 614 119	000	000	000	-1444 1755 311		#217 Base Added Total	000	-45 25 -20	-45 25 -20	-45 25 -20	000	-45 25 -20	-25 41 16	000	-25 41 16	000	-25 41 16	-25 41 16	-140 132 -8	
#170 Base Added Total	-717 903 186	000	-717 903 186	000	-153 195 42	-153 195 42	000	000	000	000	-564 707 143	-564 707 143	-1434 1805 371		#218 Base Added Total	-21	000	-21	000	-42 46	4 4 6 4	-25 41 16	000	-25 41 16	000	440	4 4 0 -	-92 100 8	
#177 Base Added Total	000	-351 406 55	-351 406 55	-351 406 55	000	-351 406 55	-129 118 -11	000	-129 118 -11	000	-129 118 -11	-129 118 -11	-960 1048 88		#219 Base Added Total	4. 6. 0. E.	000	-43 46	000	-43 46	-4 46 3	000	20	-20 20 0	-20 20 0	000	20 00	-126 133 7	
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#182 Base Added Total	-370 406 36	000	-370 406 36	-475 504 29	-370 406 36	-845 910 65	000	-475 504 29	-475 504 29	000	000	000	-1690 1820 130		#225 Base Added Total	000	000	000	000	-20 20 0	20 0	000	-396 430 34	-396 430	-416 451 35	000	-416 451 35	-832 901 69	
#201 Base Added Total	000	000	000	000	000	000	-932 1047 115	000	-932 1047 115	000	-932 1047 115	-932 1047 115	-1864 2093 229		#226 Base Added Total	000	000	000	4 4 0	000	4 4 0	-352 392 40	000	-352 392 40	000	-356 396 40	-356 396 40	-712 791 79	

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			Мах	FIS	CO/Por Marine	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour	t Vision 2000 /Maximum Rai AM Peak Hour	000 EI	S/EIR ternat	ive				<u> </u>		FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna AM Peak Hour	t Vision 2000 EI/ /Maximum Rail Al AM Peak Hour	EIS/EIR Alternative		6 i i i i i i i i i i i i i i i i i i i
Volume Type	E	NB Link Out Tot	NB Link Out Total	:	SB I	SB Link In Out Total	:	EB	EB Link In Out Total		WB I	Link	! >	Total olume		Impact An Level	Impact Analysis Report Level Of Service	 	; ; ; ;	1 1 4 1 1 1 1 1 1 1 1
#244 Baco	c	c	c	200	C15. 88C.	-600		.259 -227	.692					-1384	Intersection		Base Del/ V/	Q 80.1	Future el/ V/	Change in
Added	000	000			0 0 0			0 0			0 4			0 0	# 3 Maritime St./ Burma St.		6.3 0.0	æ	0.2	+ 2.149 D/V
10041	>	.	•		777									r 0	# 4 Maritime St./ 14th St.		C 15.0 0.161	1 C 20.5	0.803	+ 5.425 D/V
															# 5 Maritime St./	Maritime St./ 7th St. Extensio	B 12.7 0.071	1 C 17.5	0.897	+ 4.837 D/V
					•	•									# 6 7th St./ 7th St. Extension		B 11.8 0.000	ф	14.6 0.770	+ 2.773 D/V
															# 8 Adeline St./ 3rd St.		B 8.7 0.064	£L,	72.1 0.660	+63.421 D/V
															# 9 7th/Middle Harbor Rd		C 15.8 0.000) C 15.9	0.594	4 0.098 D/V
															# 10 New Harbor/Mid Harbor Rd	Harbor Rd	0.0 0.000	υ	20.9 0.821	+20.851 D/V
													•		# 12 Maritime St./ W.Grand Ave./	-I	B 12.0 0.242	υ	16.6 0.526	+ 4.653 D/V
													•		# 13 Adeline St./ 5th St./ I-880 SB		C 18.3 0.236	. ပ	23.6 0.819	+ 5.311 D/V
															# 14 Union St./ 5th St./ I-880 Nort		C 16.4 0.104	υ	17.6 0.392	+ 1.186 D/V
															# 15 7th St./ I-880 NB Ramps / Fron		B 13.0 0.366	υ	21.3 0.565	+ 8.382 D/V
															# 16 7th St./ I-880 SB Ramps		A 0.1 0.020	4	1.4 0.420	+ 1.324 D/V

A 2.8 0.000 C 3.0 0.000 + 0.000 V/C

C 21.3 0.457 + 1.477 D/V

18 W.Grand Ave./ I-880 Frontage R C 19.9 0.237

17 14th St./ I-880 Frontage Rd.

A-AM.CMD	, , , , , , , ,	Ţ	Tue Nov 5, 1996 13:15:11	6 13:15	3:11		Pa	Page 6-1	A-AM.CMD	,	Tue Nov	lov 5, 1996	96 13:15:11	5:11		Pa	Page 7-1	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Maxir	FISCO	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour	Rail F Hour	SIS/EIR Alternat	ive				Maxim	FISCO/Pc um Marir	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail AM Peak Hour	2000 Rail four	EIS/EIR Alternative		; ; ; ;	; ; ; ;	1
1994 HCM Operations Method ************************************	1994 HCM Opt	Level Of perations me St./ I	Level of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #3 Maritime St./ Burma St. ************************************	mputat: uture V	ton Reportion	ort Viternat *******	Û.		Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #4 Maritime St./ 14th St:	Level Of Service Operations Method	Service Co	omputat:	Computation Report (Future Volume Alternative)	ternati		;	:
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 8 (Y+ e: 58	00 8 (Y+R = i8	Critical Vol./Cap. (X): - 4 sec) Average Delay (sec/veh): Level Of Service:	itical erage D	Critical Vol./Cap. Average Delay (sec/ Level Of Service:	p. (X) : sec/veh)		0.267 8.5 B	Cycle (sec): Loss Time (sec) Optimal Cycle:	sec): 100 le: 66	(Y+R =	•	Critical Average D Level Of	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): c/veh):	* D * * *	0.803 20.5 C	*
Approach: Movement:	North Bound	~ -	South Bound L - T -	nd R	East B	East Bound	West	West Bound - T - R	Approach: Movement:	Nort L -	ام ج ا		ind R	outh Bound East Bound	ound	West L - T	Bound	* ~
Control: Rights: Min. Green.	Protected Include	id de	Protected Include		Protected Include	otected Include	_	Protected Include	Control: 'Rights:	rot i	<u>-</u>	i o ii	1	Per	tted	Per Per In	tted	:
Lanes:	0			- i o	_	1 0	. 0	0	Lanes:	1 0 1 1		0 1 1		10 20	0 0	1 0	20 2	0 0
Volume Module: Base Vol:	e: 5 78	0	0 287	0	0	9	0 5		Volume Module Base Vol:		39	196 201	<u>-</u>				1	- :
Growth Adj: Initial Bse:	1.00 1.00	1.00	1.00		1.0	0 1.00	1.0	1.0	Growth Adj:	1.00 1.00		1.00		1.0	1.00	-	Η.	00
Added Vol:	14	0	385						Added Vol:	399 1		103 261 0 277	108	84 0	377	0 73	8 0 0	87
PasserByVol: Initial Fut:	5 331	00	0 0	180	109	0 0	.	000	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0	0 0		0 10	0 6		0 [
User Adj:	1.00	1.00	1.00				1.00 1.	1.0	User Adj:	1.00 1.00	М	1.00	-	.00 1.00	1.00	1.00 1.00	Η.	00
PHF Ad): PHF Volume:	1.00 1.00	1.00	1.00 1.00 1 0 672	1.00 1	1.60 1.00 109 0	0 1.00	1.00 1	0 1.00	PHF Adj: PHF Volume:	1.00 1.00 1 399 260	39 103	1.00	1.00 1	.00 1.00	1.00	1.00'1.	.00 1.00	00
Reduct Vol:		0 (0 (Reduct Vol:	0			0		0	. 0	9	30
reduced vol: PCE Adj:	1.00 1.00	1.00	1.00 1.00 1	180	109 0 1.00 1.00	0 1.00	1.00 1	.00	Reduced Vol: PCE Adi:	399 260	99	103 538	108	84 0	377	22		87
MLF Adj: Final Vol.:	1.00 1.05	1.05			1.0		1.00 1	.00 1.00	MLF Adj:		50.	1.05			1.00		-i -i	0 0
				Ė			:	:		- :		103 363	-113	84 0	377	22	8	87
Saturation Flow Module:	low Module:								E	Flow Module:	=		:		_			-
Sat/Lane: Adjustment:	1900 1900 0.95 1.00	1900	1900 1900 1	1900	1900 1900	0 1900	1900 1900	00 1900	Sat/Lane:	1900 1900 1	1900 1900	1900	19001	1900 1900	1900			0 !
Lanes: Final Sat.			1.58		1.00 0.00		0.00	0	Lanes:	1.74	5 2 2	1.67		0.0		1.00 0.00		ŭ 0
				_	:	:			יייייי פעריי	2230		2/08 6	614	0 797	1129	1083	0 1615	<u>.</u>
Capacity Analysis Module: Vol/Sat: 0.00 0.09 0	lysis Module 0.00 0.09	00.0	0.00 0.24 0	0.24 0	0.06 0.00	00.00	0.00 0.00	00.0 00	Capacity Analysis Vol/Sat: 0.22	Module:	90.0 80.	0.18	0.18 0	0.33 0.00	0.33	0.02 0.00	20.000	- 2
Green/Cycle:	0.10 0.48	00.00		0.62	0.0000000	0 0	00 00 0	0	Crit Moves:	'n		* (* (
Volume/Cap:	0.03 0.19	:	0.39	:	0.30 0.00		0.0		Volume/Cap:	0.80 0.25 0	0.25 0.34	0.80	0.80	0.42 0.00	0.69	0.42 0.00	00 0.42	ry m
Level Of Service Module:	 vice Module:	-	1					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level Of Service Modul	Vice Module.								-
Delay/Veh:	26.2 9.6	0.0			22.2 0.0		0.0		Delay/Veh:	28.2 15.6	15.6 24.0	27.5		22.2 0.0	4.9	11.3 0.0	7.11 0	7
User DelAdj: AdiDel/Veh:	1.00 1.00 26.2 9.6	1.00	1.00 1.00 1	1.00 1.	1.00 1.00	0 1.00	1.00.1	00.1.00	User DelAdj:	1.00 1.00		1.00		-		-		0
Onene:		0	10				0		Queue:	9.01	15.6 24.0	16	4.15	3 0.0	4. v. ru	0.0 0.0	0 11.7	٦ /
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	FIS	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour	t Vision 2000 /Maximum Rai	0 EIS/EI	R ative	1 1 1 1 1 1	1 1 1 1 1 1			Σ	FIS aximum	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna AM Peak Hour	t Vision 200 /Maximum Rai AM Peak Hour) EIS/EIR Alternative	ive		
Level Of Service Computation Report	Level HCM Operat	Level Of Service Computation Report	e Computa	ation Re	port Alterná	ative)	1 4	1 *** 1 *** 1 ***		1994 HCM	Level Of S HCM Operations			Computation Report (Future Volume Alternative)	rt lternative *******	Ve)	! *** ! ** ! ** ! ** ! ** ! **
Intersection #5 Maritime St./ 7th St. Extension	aritime St	./ 7th St.	Extensi	uo					Intersection #6 7th St./	#6 7th		(i)	Extension	xtension			
<pre>t++++++++++++++++++++++++++++++++++++</pre>	100	***	critica	<pre>critical Vol./Cap. (X):</pre>	Cap. (X)	* * * * * * * * *	0.897	0.897	Cycle (sec):		100		Critic	Critical Vol./Cap. (X)	.p. (x) :	0	0.770
Loss Time (sec):	8 (Y+R =		4 sec) Average Delay (sec/veh):	Average Delay (se	(sec/vel	: (c	17.5	ın C	Loss Time (sec):	ec):	8 (Y+R	n 4	Average Level	sec) Average Delay (sec/veh) Level Of Service:	ec/veh):	Ĥ	14.6 B
**************************************	******	*******	******	*******	******	* * * * *	**********	****	*********	. *	*******	*	*****	****************	******	***********	*****
Approach: No Movement: L	North Bound	South	South Bound	East 	East Bound T T - F	ħ	West Bound	ınd - R	Approach: Movement:	North	North Bound - T - R	South L -	South Bound - T - R	East E	Bound F - R	West I	Bound r - R
Control:	Protected	-	Protected	 	Protected	=	Protected		Control:	Prot	Protected	- Prot	Protected	 Protected	 cted	 Protected	ted
	Include	6					Include		Rights:		nde		ude		ıde	U	
Min. Green: 10	20 20	0	20 20	10	0 0	. 6	00	00	Min. Green: Lanes:	0	- o o o	0 10	0 0 20	10 2	20 20 20	0 20	20
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Volume Module:	c	· c	334	69	0	37	0	0	Volume Module Base Vol:		0	0	0	0	0	0	0 54
 	1.00 1.00 1.00	1.0	-	ų.	÷	00 1.0	0 1.00	1.00	Growth Adj:	1.00 1.	.00 1.00	1.00 1	1.0	1.00 1.00	1.0	1.00 1.00	H
					0	37	0	0	Initial Bse:	0 (0	0 (0		0 0		
Added Vol: 910	337	0 0	383 271	231	0 0	829	0 0	o c	Added Vol:	o c	0 0	0 625	985 0	533 306	9 0	0 367	7.15
Passerbyvol: U	6		9	3		998		0	Initial Fut:			0 625	0 586		9	36	7 769
	1.00 1.00 1.00	1.001				-	-	1.00	User Adj:	1.00 1.00		1.00 1		1.00		1.00 1.00	
	_	1.00 1	-	1.00 1.00	.00 1.00	00 1.00	0 1.00	1.00	PHF Adj:	1.00 1.00	1.0	0 1.00 1.00	00 1.00	1.00 1.00	0 1.00	1.00 1.00	1.00
Reduct Vol: 0	70		000			90	00	0 0	Reduct Vol:					ร์			
: 106	337	0 0 36	383 605	300	0 86	. 998	0		Reduced Vol:	0	0	0 625	0 586	533	0 9	0 367	169
	1.00	1.00				-	0 1.00	1.00	PCE Adj:	1.00 1.00	٦.	1.00		1.00			
	_	1.001	-	-	-	1.00	01.00	1.00	MLF Adj:	1.00 1.00	0.	0 1.03 1.00	00 1.00	1.03 1.05	1.00	1.00 1.00	50.1 (
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n Fl		=		_		_		•	Saturation F	low Module		=					
Sat/Lane: 1900	1900 1900 1900	1900 1900	00 1900	1900	1900 1900		1900 1900	1900	Sat/Lane:	1900 1900	00 1 00	1900 1900	1900	1900 1900	1900	1900 1900	1900
	2.00	0.00		2.00			00.00	0.00	Lanes:	0.00 00.00		2.00				0.00 1.00	
Sat.:	3800	•	1615	3610		-	0	o ⁻	Final Sat.:			0 3610	0 1615	3610 3800	0	0 1900	3230
Anal	Module:		!	_	! '	=			Capacity Analysis Module:	lysis Mod		-	1		:	1	:
Vol/Sat: 0.30	00.0 60.00	0 0.00 0.11	11 0.37	0.09 0.00	.00 0.54	0.00	00.00	0.00	Vol/Sat: Crit Moves:	00.00.00.0	00.00	0.18 0.00	36.00.00	0.15 0.08	00.0	0.00 0.19	0.25
	00.0 99.0	0 0.00 0.31		0.26	0.00 0.61	51 0.00	00.00	0.00	Green/Cycle:	0.00 0.00	00.00	0 0.47 0.00	00 0.47	0.20 0.45	5 0.00	0.00 0.25	0.72
Volume/Cap: 0.88		0.00		0.33		38 0.00	00.00	0.00	Volume/Cap:	0.00 0.00	00.00	0.38 0.00	77.0 00	0.77 0.19	00.0 6	0.00 0.77	0.35
Level Of Service Module	Module:	-		-		<u>-</u>	1	-	Level Of Service Module	rice Modu	 11e:			-		-	1
Delay/Veh: 25.3		0.0		19.3			0.0 0	0.0	Delay/Veh:	0.0 0.0		11.1		28.1 10.7		0.0 24.2	
••	1.00.1	-		1.00 1			-	1.00	User DelAdj:	-	-	1.00	1.00	1.00 1.00	-		1.00
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The properties of the properties of the properties and the propertie																		
## Adeline St. / 3rd St. 1994 #GW Operations Method (Puture Volume Alternative)		FISC Maximum M	O/Port Visic arine/Maximu AM Peak	on 2000 im Rail Hour	EIS/EI Altern	Rative					Σ	FIS	CO/Port Marine/M	Vision 2		ive		
Cycle (sec): 120 Cycle (sec)	1994 ***********************************	Level HCM Operati ************************************	Of Service Cons Method (************************************	Computat Future	tion Re Volume	port Alteri	native	* *	*	Intersection	1994 HCM	Level Operati	Of Servions Met	ice Compi hod (Fut:	tation Report Nation Report Nation Report Nation Report National Report Nation	ort Alternat	ive)	1
## North Bound South Bound Bart Bound North Bound Approach: North Bound South Bound Approach: North Bound South Bound South Bound Approach: Split Phase Split Phas	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 12 (Y+R 92	C = 4 Sec) A	ritical verage evel of	l Vol./ Delay Servi	Cap. (: (sec/vece:	x): eh):	7.7	. 6	Cycle (sec): Loss Time (s	ec):	100 8 (Y+F 58	* * * * * * * * * * * * * * * * * * *	* ~ .	cal Vol./Ca ge Delay (s of Service	<pre>'****** 'p. (X): sec/veh) ::</pre>	* * *	0.594 15.9 C
Split Phase Split Phase	Approach: No Movement: L	rth Bound T R	South Bo	und - R	Eas L	t Bound	2 X	West E	ound - R	Approach: Movement:	. 1	Bound F - R	k (D	th Bound T - R		******* Bound [- R	* 13 * *	********** West Bound - T - R
Manual	=	lit Phase Include	_	ase de		t Phase	-	Split F Incl	hase ude	Control: Rights:	 Prote Inc	scted	 Pr()tected	- Prote Inc	otected Include	Pro	Protected Include
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100 100			0	0	00				n	FAF VOLUME: Reduct Vol:	17				0 0	8 0	361	593
1	7		1.00		-		-	-	•	Reduced Vol:			0		0		361	593
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1900 1900 1900 1900 1900 1900 1900 1900	Satura	Saturation Flow Module:	_	-	
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ysis Module: 0.18 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.22 0.35 0.00 0.00 0.22 0.00 0.65 0.00 0.00 0.00 0.00 0.27 0.27 0.42 0.70 0.00 0.82 0.00 0.47 0.00 0.00 0.00 0.00 0.01 0.82 0.82 0.01 0.00 vice Module:	3800	Sat.: 3610 576 1134	1805 645 1084	1805 1900 3230	1805 3694 106
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0.82 0.00 0.47 0.00 0.00 0.00 0.00 0.01 0.82 0.82 0.01 0.00	0.70 0.00	Green/Cycle: 0.13 0.22 0.22	0.11 0.20 0.20	0.19 0.47 0.47	0.10 0.38 0.38
- rvice Module:	0.01	0.64		0.44 0.64	0.23
		ervice Module:			
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A-AM.CMD	ቲ ተ	Tue Nov 5, 1996 13:15:11	996 13:	15:11			Page 1	14-1	A-AM.CMD		2	Tue Nov 5, 1	1996 13:	13:15:11		Page	re 15-1
	FISC Maximum Me	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour	on 2000 um Rail k Hour	EIS/EI Altern	R ative					Maxi	FISCO mum Ma	FISCO/Port Vision Maximum Marine/Maximum AM Peak I	t Vision 2000 /Maximum Rail AM Peak Hour	EIS/EIR Alternative	o v		
15	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	of Service Computation Report ons Method (Future Volume Alt	Computa (Future	tion Re Volume	port Altern	ative) ******		* * * * * * * * * * * * * * * * * * * *	***************************************	Level Of Service 1994 HCM Operations Method	Level Of HCM Operations		Computa (Future	rvice Computation Report lethod (Future Volume Alternative)	t ternati	ve)	***************************************
Intersection	Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp.	5th St./	I-880 S	B Ramp.	* * * * * * *	* * * *	****	* * * * * * * * * * * * * * * * * * * *	Intersection #14 Union St./ Sth St./ I-880 North Ramps	#14 Union	St./ 5	Sth St. / I-	880 Nor	I-880 North Ramps	***	****	*****
Cycle (sec): Loss Time (sec):		4 sec)	Critical Vol./Cap. Average Delay (sec/	l vol./	Cap. (X) (sec/veh); 5);	0.819	61 6	Cycle (sec): Loss Time (sec)	100 ec): 11	(Y+R	= 4 sec)	Critical Vol., Averaqe Delay		Cap. (X): (sec/veh):	0	0.392
Optimal Cycle:	. 92		Level Of Service:	f Servi	ce:		0	U		***	*	***	Level 0			****	Ü
Approach:	North Bound	South Bound	punc	Eas	East Bound		West Bound	hund	Approach:	North	nnd	ťΩ	puno		puno	3	West Bound
Movement:	L - T - R	L - T -	۳ - ۳	ا		ж : -:-	£ .	۳	Movement:	L - T	- R	L - 1	۳ - ا	L - 1	2 - L	- ב - -	T - 7
Control:	Protected	Protected	red	Spli	Split Phase	=	Split Phase	lase	Control:	Protected	- pa	Protected	ted	Split Phase	hase	Split	Split Phase
Rights: Min Green:	0v1	Include	nde 20	Ä	Include	20	Include	ide 20	Rights: Min Green:	Include	ide 20	Include	nde 20	Include	nde	uI or	Include
Lanes:	0 1 1		-	1 .	-	<u>-</u>			Lanes:	, r	: 	0	н		ч	, •	1 1 0
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	1.00 1.0	1.00 1	_	1.00 1.00	00 1.00	-	-	1.00	Growth Adj:	-	1.00	-	4	ä	Η.	~1	_
Initial Bse:	105 150 433	72 109	165	256	51	0 264 55	0 169	364	Initial Bse:	0 175	45	0 154	31	24 43	EL C	205	31 115
PasserByVol:	0		0					0	PasserByVol:		* O	00	0		0	0	0 0
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				1.001		н,			User Adj:	1.00 1.00	1.00			1.00 1.00		1.00 1.	.00 1.00
PHF Adj: 1	1.00 1.00 1.00	72 312	1.00	1.00 1	1.00 1.00	-	.00 1.00	1.00	PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00'1.00	
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1.:		72 327		282	56 290	4	554 177	191	Final Vol.:	0 193	340	0 162	33	25 45	14	400	31 115
						=											
Saturation Flow Module:	ow Module:	0001	•	000	000	-		9	¤	Flow Module:	•						
 				0.91 0		10			Adjustment:	1.00 0.90	0.90	1.00 0.97	0.97	0.96 0.96	0.96	0.95 1.	1.00 0.85
Lanes:	1.00 1.00 1.00	1.00		1.67 0	0.33 1.00	~ *	96.0 00.		Lanes:	0.00 1.09	1.91	0.00 1.66					
_	- ;		- :	:	- ;	1 📥		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	בייייייייייייייייייייייייייייייייייייי	0.001.0	32.72	7905 0	1				 CIQT
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)) 		*		! ! :	Crit Moves:			*					
••		0.10		0.20 0		0		0.36	Green/Cycle:	0.00 0.22	0.22					0.47 0.47	47 0.47
Volume/Cap: C	0.86 0.35 0.46	0.40 0.69	0.69 0.4	6;	0.49 0.84	° <u>-</u>	.86 0.30	0.30	Volume/Cap:	0.00 0.47	0.47	0.00 0.24	0.24	0.12 0.12	0.12	0.47 0.03	03 0.15
_ ក្ន		_	_			=		-	Level Of Service Modul	vice Module	-		-				
		28.0		23.2 2		~ ~	ч.	15.1	Delay/Veh:		22.2	0.0 20.8					
User DelAdj: 4 AdiDel/Veh: 4	46.7 21.1 8.0	28.0 26.0	26.0	23.2 23.2	23.2 30.6	27	7 15.1	15.1	User DelAaj: AdiDel/Veh:	0.0 22.2	22.2	0.0 1.00	20.8	21.2 21.2	21.00	12 0 4 2	00.1 00.
Onene:	7 4 7	2 9	S	7			1	4	Queue:	0 5	80		; 				
*********		**********	******	******	******	******	******	*****	*****	*********	******	*******	******	*********	*****	*******	******

A-AM.CMD		Tue	Tue Nov 5,	1996 1	1996 13:15:11	1		Page	16-1	A-AM.CMD		Tue Nov	5,	1996 13:15:11	15:11		Page	17-1
	Maxin	FISCO/	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour	t Vision 200 /Maximum Rai AM Peak Hour	000 EIS	S/EIR :ernati	e ^				Maxim	ISCO/Po	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail AM Peak Hour	on 2000 um Rail k Hour	EIS/EIR Alternative	ive		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	evel Of exation	Level Of Service Computation Report perations Method (Puture Volume Alt. r	e Compu d (Futu mps / F	tation re Vol	Repor	t ternati	ve)		1994 ***********************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #16 7th St./ I-880 SB Ramps	Level Of Service Operations Method	el Of Service C ations Method (Computa (Future	Level Of Service Computation Report Derations Method (Future Volume Alt	rt .lternative) *********	1Ve)	1 4: 1 4: 1 4: 1 4: 1 4:
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 10 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 70 Level Of Service:	100 3c): 10	.00 10 (Y+R = 70	* * * * * * * * * * * * * * * * * * *	Criti Avera Level	cal Vc	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	(X): c/veh):	• •	**************************************	Cycle (sec): Loss Time (sec): Optimal Cycle:	* ~ ,	(Y+R =	4 sec)	Critical Average I Level Of	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	p. (X): ec/veh):	0.420 1.4 A	420 1.4 A
Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R	North Bound L - T -	und - R	South	South Bound	7	East Bound	ound R	West I	West Bound	Approach: Movement:	North Bound L - T - R	~	South Bound L - T -	ound - R	East 1	East Bound		lound - R
Control:	Protected	be	Prot	Protected Ovl	=	Protected Include	ted tde	 Protected Include	otected Include	Control: Rights:	 Protected Include	<u>-</u> - -	Protected Include	ted ude		otected Include	 Protected Include	ted
Min. Green: Lanes:	10 20	1 0	01	0	20 1	10 20 0 2	0 70	0 0 -	20 20 1 1 0	Min. Green: Lanes:	0 0 0	。-	0000	00	000	20 20 2 0 1	10 20 2	0 0 0
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Base Vol: Growth Adj:	0 548 1.00 1.00		1,00 1.00	ä		ä	1.0	1.00 1.00	62 1 00 1.00	Base Vol: Growth Adj:	1.00		1.0	1.00	1.0	1.0	1.00 1.0	1.00
Initial Bse: Added Vol:	0 548	21	0	0 94	94 0 154 313	0 16	00	00	62 1 20 0	Initial Bse: Added Vol:		00	00		31	0 0 8 614	65 0 0 1082	00
PasserByVol:	0 0	۰ ;	0;	0 0		0 6	0 6	00	0 0 0	PasserByVol:	00	00	00	0 0	0 0	0 0 8	0 0	
initiai fut: User Adj:	1.00					00.1.00		-		User Adj:	1.00		Н	1.00			1.00	
PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1.	00 1.00	1.00	1.00	1.00	1.00 1.00	00 1.00 82 1	PHF Adj: PHF Volume:	1.00 1.00 1	00.1	0 1.00	1.00	1.00 1.00 0 318	0 1.00 8 614	1.00 1.00 65 1082	1.00
Reduct Vol:		۰ ;	0 [0 7	;	0 0	0 0	0 0	0 0 0	Reduct Vol:	00	00	00	00	0 0	0 0	0 0	00
Reduced Vol: PCE Adj:		1.00	1.00 1.00			1.00 1.00		1.00 1.00		PCE Adj:	1.00				1.00 1.00		1.00.1	
MLF Adj: Final Vol.:	1.03 1.00 729 548	1.00	1.00 1.00	00 1.13 0 507		1.00 1.05 313 22	1.00	1.00 1.05 0 86	05 1.05 86 1	MLF Adj: Final Vol.:	1.00 1.00 1	00.1	0 1.00	00.	1.00 1.05 0 333	3 614	67 1136	00.1
Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 0.95 0.99 Lanes: 2.00 0.96 Final Sat.: 3610 1812		1900 1900 0.99 0.04		00 1900 00 0.85 00 2.00 0 3230	= :	1900 1900 0.95 1.00 1.00 2.00 1805 3800	1.000	1900 1900 1.00 1.00 0.00 1.98	6 4	Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 1.00 1.00 Lanes: 0.00 0.00 Final Sat.: 0	1	11.00 11.00	1900 1900 1.00 1.00 0.00 0.00	1,000	1900 1900 1.00 1.00 0.00 2.00 0 3800	0 1900 0 0.85 0 1.00 0 1615	1900 1900 0.95 1.00 2.00 2.00 3610 3800	1,000
Capacity Analysis Module: Vol/Sat: 0.20 0.30 0 Crit Moves: **** Green/Cycle: 0.28 0.38 0 Volume/Cap: 0.72 0.79 0	1ysis Module 0.20 0.30 **** 0.28 0.38	.30	0.01 0.00 0.10 0.00 0.09 0.00	0.00 0.16 0.00 0.42 0.00 0.37	15 0.17 1.19 1.19 1.19 1.19 1.19	17 0.01 14 22 0.42 79 0.01	00.0	0.00 0.02		Capacity Analysis Module: Vol/Sat: 0.00 0.00 0 Crit Moves: Green/Cycle: 0.00 0.00 0 Volume/Cap: 0.00 0.00 0	Lysis Module:	8. 88.	0.00 0.00	00.0	0.00 0.09	9 0.38 **** 5 0.85 0 0.45	0.02 0.30 **** 0.10 0.95 0.19 0.31	00.00
Level Of Service Module: Delay/veh: 22.6 22.0 26.4 0.0 13.0 31.1 11.0 0.0 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	ervice Module: 22.6 22.0 j: 1.00 1.00 : 22.6 22.0 19 15	22.0 1.00 22.0 22.0	26.4 0.0 26.4 0.0 26.4 0.0	0.0 13.0 0.0 1.00 0.0 13.0	3.0 31.1 00 1.00 3.0 31.1 10 9	31.1 11.0 1.00 1.00 31.1 11.0 9 0	1.00	0.0 21.2 1.00 1.00 0.0 21.2 0.0 21.2 0.0 21.2	2 21.2 2 1.00 2 21.2 2 21.2	Level Of Service Module Delay/Veh: 0.0 0.0 User DelAhi: 1.00 1.00 AdjDel/Veh: 0.0 0.0 Queue: 0 0	! rt *	0.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0	1.00	0.0 0.8 1.00 1.00 0.0 0.8	8 1.3 0 1.00 8 1.3 2 4	26.7 0.1 1.00 1.00 26.7 0.1	1.00

+::- a/ 000 pg									
FISCU/POTE VIS Maximum Marine/Maxin	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative AM Peak Hour			FISC Maximum M	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail AM Peak Hour	2000 EIS/EIR Rail Alternative our	9/		
Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative) Intersection #17 14th St./ 1880 Frontage Rd.	Level Of Service Computation Report usignalized Method (Future Volume Alternation) St./ I-880 Frontage Rd.	1 c c c c c c c c c c c c c c c c c c c	1994 H	Level Of Service Computation 1994 HCM Operations Method (Future Vo	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative)	Computation Report (Future Volume Alternative)	:ernative	: :	*
Average Delay (sec/veh): 3.0 Worst Case Level Of Se	Worst Case Level Of Service:	Service: C	Cycle (sec):	100	Crit	Critical Vol./Cap. (X):	(X):	0.457	* 6
Approach: North Bound South Bound	Bound East Bound	West Bound	Optimal Cycle:	81	מנים לי	Average Delay (sec/ven): Level Of Service:	:/ven):	21.3 C	m U
		- !	Approach:			South Bound East Bound	******** und	**************************************	und
Control: Uncontrolled Uncontrolled Rights: Include Include	ontrolled Stop Sign Include Include	Stop Sign Include	Movement:	L - T - L	L - T -	R L - T	- R	L . T	2
Lanes: 0 0 1 1 0 1 0 2	0 0 0 0 0 0 0	1 0 0 0 1	Control: Rights:	Split Phase	Split Phase	Pr	ed .	Protected	eq.
dule:	-		Min. Green:	20	10 20	20 10 20	20	10 20	de 20
1.00 1.00 1.00 1.00 1.0	0 1.00 1.00 1.00	140 0 6 1.00 1.00 1.00	Lanes:	1 0 1 1 0	1 1 0 1	0 1 0 1	1 0	1 0 1	1
. 0 0 89 30	0 0	40 0	Volume Module:		-				:
Added Vol: 0 313 0 0 354	0 (٥	678 48	65		0 152	449
0 313 89 30 35		140 0 6	Growen Adj: Initial Bse:	00.1 00 1.00	1.00 1.00	1.00 1.00 1.00	1.00	1.00 1.00	1.00
1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1	Added Vol:	164 14	0	, 0			44
PHF Adj: 1.00 1.00 1.00 1.00 1.00 PHF Volume: 0 113 89 10 354	1.00 1.00 1.00	1.00 1.00 1.00	PasserByVol:	0 ,	0 0	١٥			
0 0 0	000	. 0	User Adi:	1.00	1.00 1.00	65 299	12	159 234	449
Final Vol.: 0 313 89 30 354	0 0	0		-	1.00 1.00	1.00		1.00,1.00	1.00
ed Volume Module:		;	PHF Volume:	164	678 24	65 29		159 234	449
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XXXX XXXX	XXXX		PCE Adi:	1 00 1 00 1 00	1 00 1 00	, 65 C		159 234	449
1.10 1.00 1.00 1.10 1.0	1.10 1.10	2		1.05	1.05 1.00	1.00 1.00 1.00	1.00	1.00 1.00	1.00
Cycl/Car PCE: xxxx xxxx xxxx xxxx		~		172	712 243	65			494
XXXX	xxxx xxxx xxxx	xxxx xxx				- ;	<u>-</u>	- ;	
voi.: tical Gap Mod		154 0 7	Saturation Fl	••					
xx xxx xx	2.1 xxxx xxxxx xxxxx xxxx	3.4 xxxx 2.6		006T 006T 006T	1900 1900	1900			1900
	5.5 xxxx xxxxx xxxxx xxxxx xxxxx	.0 xxxx		1.05	2.00 0.98			0.90 6.90	5,5
<u></u>	-		Sat.:	1848	3610 1854	1805			3374
									!
CHILICE VOI: XXXX XXXX XXXXX 402 XXXX XXXXX Potent Cap.: XXXX XXXX XXXXX 1043 XXXX XXXXX	C XXXXX XXXX XXXXX	355 xxxx 201	Capacity Analysis	Module	;	;			
	XXXXX XXXX XXXX	2 xxxx		60.0 60.0 00.0	0.20 0.13 0.13	13 0.04 0.09	0.09 0.	0.09 0.15	0.15
xxxx xxxx xxxx :	XXXX XXXX XXXX	4 xxxx		0 0 0 0 0 0 0	77 0 77 0			* 1 * (,
				0.47	0.58	39 0.36.0.37	0.23	0.12 0.25 0.75 0.58	0.25
Level Of Service Module:		•	_				=	0 1 0 1	0.00
CXXXX XXXX XXXXX	x xxxx xxxx xxxxx	6 xxxx 3	erv	Ü		-	-		
	• !	•		23.2	18.0 16.3	.3 27.7 20.9		37.0 21.7	21.7
	LT - LTR - RT	- LTR		1.00	1.00 1.00	1.00			1.00
Shid Ctile; XXXX XXXX XXXXX XXXX XXXX XXXXX Chid Ctile; XXXX XXXXX XXXXX	XXXXX XXXX XXXX X	XXXX	/veh:	20.8 23.2 23.2	0 16.	.3 27.7 20.9			21.7
SHINGS TOO.	, xxxx xxxx xxxx xxxx x	xxxx xxxx xxxxx	Onene:	4.	17 5	0 2 7	0	5	12
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0.0		17.0							

A-PM.CMD	Tue Nov 5, 1996 10:49:50	996 10:49	:50			Page 1-1		A-PW CWD		R VON	1996 10:49:50	49.50		_	Page 1-2
	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	on 2000 E um Rail A c Hour	IS/EIR lternati	ve					Maxin	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna	t Vision 2000/Maximum Rail	EIS/EIR	ive		
	1			• • • • • • •					1	4 114	dan mout				1
	Forecast for PM Peak Hour	PM Peak	Hour					Zone # Subzone	Amount	Units	Rate In	Rate Out	Trips T In C	Trips 1	Total % Of Trips Total
Zone # Subzone	Amount Units	Rate In	Rate Out	rips In	rips ut	tal	\$ Of Total	Zone	28 Subtotal	al			271	325	596 10.9
1 New Harbor Zone 1	1018.00 Employees Subtotal	90.0	0.22	61	224	285	5.2	TOTAL					2257	3208	5465 100.0
3 J.I.T. Zone 3	360.00 Employees Subtotal	0.10	0.36	36 36	130	166 166	3.0								
6 Middle Harbr Zone 6 3	r 516.00 Employees Subtotal	0.06	0.22	31	114	145 145	2.7								
7 7th St Harbr Zone 7 8	c 613.00 Employees Subtotal	0.06	0.22	37	135	172	3.1								
8 Outer Harbor Zone 8	Harbor 706.00 Employees Zone 8 Subtotal	0.06	0.21	4 4 2 2	148	190	3.5								
10 New Park Zone 10	ark 1.00 Total Trips Zone 10 Subtotal	33.00	40.00	33	4 0 0	73	1.3								
11 New Harbor Zone 11	arbor 1.00 Trucks Inter Zone 11 Subtotal	203.00	243.00	203	243	446	. 8.2								
16 Middle Harbr Zone 16	r 1.00 Trucks Inter 5 Subtotal	103.00 123.00	123.00	103	123 123	226	4.1								
17 7th St Harbr Zone 17	r 1.00 Trucks Inter 7 Subtotal	122.00 147.00	147.00	122	147	269	4.9 6.9								
18 Outer Harbor Zone 18	r 1.00 Trucks Inter 3 Subtotal	141.00 169.00	169.00	141	169	310	5.7								
21 New Harbor Zone 21	1.00 Truck External Subtotal	1 391.00 468.00	468.00	391 391	468	859 859	15.7 15.7								
23 J.I.T. Zone 23	Zone 23 Subtotal	353.00	423.00	353	423	776 776	14.2 14.2								
26 Middle Harbr Zone 26	e Harbr 1.00 Truck External Zone 26 Subtotal	198.00	237.00	198	237	435	8.0								
27 7th St Harbr Zone 27	t Harbr 1.00 Truck External 235.00 282.00 Zone 27 Subtotal	1 235.00	282.00	235	282	517	و. د. د.								
28 Outer Harbor	r 1.00 Truck External 271.00 325.00	1 271.00	325.00	271	325	296	10.9								
Traffix 6.8.0306	36 (c) 1996 Dowling Assoc. Licensed to Dowling	oc. Licen	sed to [owling	Assoc.,	, Oakland	nd	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	106 (c) 1	996 Dowling As	ssoc. Lic	ensed to I	bowling	Assoc.,	Oakland

Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Marine/Maximum Rail Alternative Particular Maximum Maxi	1		Tue No	W 5, 1	Tue Nov 5, 1996 10:49:50	49:50		; ; ; ; ; ;	Page 2-1	A-PM.CMD	, ð			Tue N	ov 5,	Tue Nov 5, 1996 10:49:50	3:49:5	0		д	Page 3-1	i.
Turning Movement Report PM Peak Hour Volume Northbound Southbound Bastbound Hestbound Type Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Left Thru Right Volume Type Left Thru Right Volume Type Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Left Thru Right Left Thru Right Left Thru Right Volume Type Left Thru Right Type Left Thru Right Left Thru Right Th	FISCO/	Mar Mar	Por	t Vision/Maxim	on 2000 um Rail k Hour	Alter	IR native					w W	FI	SCO/Po Marin	rt Vis e/Maxi	ion 200 mum Raj	00 EIS	/EIR ernativ	. 0	:	, ;	
Turning Movement Report PM Peak Hour Volume Northbound Southbound Base Base Base Base Base Base Base Base	Tri	Ţ,	Q Q	istribu	ution R	eport								!	F	מא שסמו			1		1	-
12 13 14 15 16 16 17 18 18 18 18 18 18 18	Pe	Pe	rcen	t Of Ti	rips Ex	isting								Turn	ing Mo PM Pe	vement ak Hour	Repor	ш				
13 14 15 16 Type Left Thru Right Left Thru Right Left Thru Right Left Thru Right Left Thru Right Volume St.			ဥ	Gates						Volume		rthbound		South	ponuq.		sastbo	pur	æ	stbound		[ota]
H3 Maxitime St./ Burma St. H3 Maxitime St./ Burma St. Base 5 590 0 109 0 0 50 0 0 0 0 0 0	s :		11	12	13	14	15	16		Туре	Left 1	rhru Righ		ft Thr	u Righ		. Thru	Right	Left	îhru Ri	ght Vo	olume
17.0 23.0 11.0 30.0 14.0 Added 0 354 0 0 109 0 0 50 0 0 0 0 0 0										#3 Mari	itime 9		la St.									
5.0 17.0 23.0 11.0 30.0 14.0 Added 0 354 0 0 210 92 160 0	0.0 0.0					11.0	30.0	14.0		Base	ស	290	0			0	0	50	0	0	0	754
5.0 17.0 23.0 11.0 30.0 14.0 Total 5 94 0 319 92 160 0 50 0						11.0	30.0	14.0		Added	0	354	0				-	0	0	0	0	816
5.0 17.0 23.0 11.0 30.0 14.0 #4 Maritime St./ 14th St. Added 23.0 23.0 10.0 92 0 290 290 5.0 17:0 23.0 11.0 30.0 14.0 Base 0 142 68 100 0 92 0 290 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 382 92 0 290 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 382 92 0 290 0.0						11.0	30.0	14.0		Total	2	944	0					20	0	0	0	1570
#4 Maritime St./ 14th St. 9.0 17:0 23.0 11.0 30.0 14.0 Base 0 414 28 105 132 0 0 0 0 0 290 9.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0						11.0	30.0	14.0														
9.0 0.0 0.0 0.0 0.0 100.0 Maded 295 255 0 142 68 100 0 382 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						11.0	30.0	14.0		#4 Mari	itime 9	St./ 14th	St.									
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0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0				0.0	0.0	0.0		Added	295	255						382	0	0	0	1241
#5 Maritime St./ 7th St. Extension 0.0 0.0 0.0 0.0 0.0 0.0 Base 36 0 0 0 0 75 223 0 74 0 0 0 2.0 20.0 9.0 20.0 32.0 17.0 2.0 20.0 9.0 20.0 32.0 17.0 2.0 20.0 9.0 20.0 32.0 17.0 #6 7th St. Extension #6 7th St. Extension #6 7th St. Extension #6 7th St. Extension #6 7th St. Ath St. Extension #6 7th St. Ath St. Extension #6 7th St. Ath St. Extension #7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0	0				0.0	0.0	0.0		Total	295							382	95	0	290	2302
0.0 0.0 0.0 0.0 0.0 0.0 0.0 H5 Maritime St./ 7th St. Extension 2.0 20.0 9.0 20.0 32.0 17.0 Base 36 0 0 0 75 223 0 74 0 0 0 0 0 20.0 32.0 17.0 Added 730 325 0 0 307 218 224 0 795 0 0 0 0 20.0 20.0 32.0 17.0 Total 766 325 0 0 307 293 447 0 869 0 0 0 0 2.0 20.0 32.0 17.0 #6 7th St./ 7th St. Extension 2.0 20.0 9.0 20.0 32.0 17.0 #6 7th St./ 7th St. Extension Added 0 0 0 31 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0				0.0	0.0	0.0														
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2.0 20.0 9.0 20.0 32.0 17.0 Added 730 325 0 0 307 218 224 0 795 0 0 0 0 20.0 20.0 32.0 17.0 Total 766 325 0 0 307 293 447 0 869 0 0 0 0 20.0 20.0 32.0 17.0 #6 7th St. / 7th St. Extension 2.0 20.0 9.0 20.0 32.0 17.0 Base 0 0 0 31 0 0 0 0 0 0 0 0 265 494 Added 0 0 0 0 114 0 118 562 373 0 0 265 494		0				20.0	32.0	17.0		Base	36	0	0					74	0	0	0	408
2.0 20.0 9.0 20.0 32.0 17.0 Total 766 325 0 0 307 293 447 0 869 0 0 0 0 20.0 20.0 32.0 17.0 #6 7th St. / 7th St. Extension 2.0 20.0 9.0 20.0 32.0 17.0 #6 7th St. / 7th St. Extension Base 0 0 0 31 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0	0				20.0	32.0	17.0		Added	730	325	0					795	0	0	0	2599
2.0 20.0 9.0 20.0 32.0 17.0 #6 7th St. / 7th St. Extension 2.0 20.0 9.0 20.0 32.0 17.0 Base 0 0 0 0 31 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0				20.0	32.0	17.0		Total	166	325	0					869	0	0	0	3007
2.0 20.0 9.0 20.0 32.0 17.0 #6 7th St. / 7th St. Extension Base 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						20.0	32.0	17.0														
0 0 0 31 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			2.0		9.0	20.0	32.0	17.0		#6 7th	St./ 7		xtens	ion								
0 0 0 683 0 418 562 373 0 0 265 494										Base	0	0		31				0	0	0	0	31
0 0 0 714 0 418 562 373 0 0 0										Added	0	0	0	83				0	0		494	2795
										Total	c	c	,	4.				c	c		707	2000

#12 Maritime St./ W.Grand Ave./ I-880 Ramps

Base 0 23 0 9 23 23 20 454 210 0 624 13

Added 438 0 76 0 0 0 0 250 52 0 0

Total 438 23 76 9 23 23 20 454 460 52 624 13

#9 7th/Middle Harbor Rd Base 0 0 0 Added 4 0 346 Total 4 0 346

#7 Base Added Total Base Added Total

#8 Adeline St./ 3rd St.

. 260

#10 New Harbor/Mid Harbor Rd Base 0 0 0 Added 346 0 589 0 Total 346 0 589 0

A-PM.CMD	Ω			2	e Nov	Tue Nov 5, 1996 10:49:50	16 10:	49:50				Page	3-2	A-PM.CMD	ΜΩ			Tue	Tue Nov	5, 1996	1996 10:49:50	1:50			Pa	Page 3-	m
1 1 2 1 1	! ! !	: ! !	Maxin	FISCO	/Port rine/M	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	2000 Rail Hour	EIS/	EIR rnativ		1 1 1 1	1 1 1 1 1	I I I I				Maxim	'ISCO/	Port vine/Ma	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna PM Peak Hour		IS/EI	EIS/EIR Alternative	·			
Volume Type	Northbound Left Thru Right	Northbound t Thru Rigi	;	So	Southbound Left Thru Right		Ea Left	Eastbound Left Thiu Right	nd Right	Left	Westbound Left Thiu Right	1	Total Volume	Volume	Lef	Northbound t Thru Rigl	:	Sou left T	Southbound Left Thru Right	:	Eastbound Left Thru Right	Eastbound t Thru Ri	;	West left Th	Westbound Total	Tr pht Vo.	Total olume
#13 Adeline St./	line 9	St./5	5th St./ I-880 SB Ramp	./ I-8	80 SB	Ramp	ر م	157	c	c	202	41,9	1423	#159 Base	-259	o	a	o	o		0	0	. 0		-105		-364
Added	246	189	520	7 0	122	b 0	0	0	158	348	0	0	1583	Added	329	0	. 0	0	. 0	0	. 0	0	0		97	0	426
Total	246	189	520	241	122	69	138	157	158	348	202	919	3006	Total	70	0	0	0	0	0	0	0	0	0	8-	0	62
#14 Union St./ 5th	on St.	./ Stl		I-880	North	I-880 North Ramps				;	i	;	į	#160	•	•	•	•	,	(•	,			c L		Ş
Base	0 0	194	281	0 0	144	0.0	E C	97	8 0	32	31	4.0	892	Base	o c	> c		o c	- 0		0			7- COT-	329		-364
Total	0	194	439	0	144	30	31	97	18	278	31	34	1296	Total	00	0	0	0	0	0	0	0	0		70	0	62
#15 7th	7.25	T-880	I-880 NB Ramps /	/ same		Frontage Rd	_:							#161													
Base	0	197	m	7		205		108	0	0	53	-	569	Base	0	0	0		-105	0	0		-150	0	0		-255
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Total	48 C	197	71	7	>	۵/ 4	365	126	>		e n	-1	01.1	וווייי	•	•	>	•	•	•	,	•	9	•	•	,	2
#16 7th	St./	I-880	SB	sdwe	c	c	•	•	,	378	•	c	285	#165	c	c	c		-126	c	0	'	534	0	0	0	099-
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#17 14ch	h St./		I-880 Frontage		Rd.									#170													
Base	0	62	130	4	0	0	0	0	0	115	0	7	318	Base			6	0	0 (0 (0 (0 1	0 (0 (965-
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Added	0	186	179	0	130	0	0	16	0	138	52	0	761	Added	0	0	0	0	263	0	0	57	0	0	0	0	421
Total	75	258	179	759	130	9	98	353	m	138	508	330	2825	Total	0	0	0	0	49	0	0	9-	0	0	0	0	44
#134														#178		į	,	•				ļ					
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Added	0		569 569	0	0	0		553		682	389	0	2193	Total	0	62	0	0	0		-26	20					56
#13R														#182													
Base		-168	0		-123	-24	-20	0	0	٥	0	0	-335	Base	'	-439	0	0		-297	0	0	0	0	0		-736
Added	0	0	0	0	0	0	0	0	0	٥	0	0	0	Added	0	475	0	0	0	325	0	0	0	0	0	0	199
Total		-168	0		-123	-24	-20	0	0	0	0	0	-335	Total	0	36	0	0	0	28	0		0	0	0	0	63
#158														#201													
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!	! ! !	:		FISC imum M	20/Por farine	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	t Vision 200 /Maximum Rai PM Peak Hour	00 EI! il Alt	S/EIR ternat	ive						1 1 1 1 1	! ! ! !		FISCO	/Port rine/l	t Vision 200 //Maximum Rai PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR um Marine/Maximum Rail Alterna PM Peak Hour	EIS/1	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	; ; ; ;	1 1 1 1 1	; ; ;	1 4 1
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#204 Base Added Total	000	000	000	-375 413 38	5 -668 3 781 3 113		000	000	000	000	000	000	000	-1043 1194 151	#244 Base Added Total	000	000	000	000	000	302 -302 -302	-226	-44 0 -44	000	000	-37	000	609-
#207 Base Added Total	000	-463 525 62	000	000	000	000		000	000	000	000	0 -278 0 308 0 30		-741 833 92														
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#217 Base Added Total	000	000	000	000	-19 0 9 0 -10		000	0 -47 0 67 0 20	660	000	000	000	000	66 9														
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			Maxi	FISCC mum Ma)/Port	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	n 2000 m Rail Hour	2000 EIS/EIR Rail Alterna Iour	EIR	á							Махіп	FISCO/	Port ine/M	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail PM Peak Hour	n 2000 n Rail Hour	EIS/EIR Alternative	Native				
! ! ! !		:	! ! ! !	t 	Link	Link Volume Report PM Peak Hour	e Repo	ort	 	 	1 1 1 1	 		Volume	ä	NB Link Out To	nk Total	i i	SB Link Out To	nk Total	E U	EB Link Out To	nk Total	I N	WB Link Out To	nk T Total Vo	Total
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1 y pe			•			150		,		;	,			Base	0		0	310		1064	295	271	999			1216	2846
#3 Maritime				St.										Added	955	628	1583	122	189	310	158	246					3166
Base	595	159	754	109	290	669	20		25	0	0	0	1508	Total	955	628	1583	432		1374	453	517	970 1		918 2	2084	6012
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זחרמז	۲. ۲.	600	9161			6161	7	ì	2	•	>	•	2	Base	475	194		174	259	433	146	61	207	7	378		1784
#4 Maritime			14th St	•										Added	158	246	404	0	0	0		0	0		158		608
Base	442	224	999	237	704	941	0 6	0 %	0 5	382	133	515	2122	Total	633	440	1073	174	259	433	146	61	207	m		879	2593
Total	40 70 70	070	1740		304 1058	1505	4 6 4	362	9 4 4	382		515	4604	#15 71	7th St. /	I-880	NB Ramps	/ sam	Front	Frontage Rd							
1004	1	?							;	! } }	ì		•	Base		•		_	198	405			366	54		7	1138
#5 Maritime			7th St.		Extension									Added	485	0	485	268		633	383		1141		18	23	2283
Base	36	74	110	75	223	298	297		408	0	0	0	816	Total	685	0	685	475	263	1038		1016 1	1507	29	131	190	3421
Added		1102	2157	525	549	1074			1967	0 (0 (0 (5198	i	ć												
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#8 Adeline		St./ 3rd St	rd St.											Added	365	268	633	3	98	31	96	22	128		55	445	1522
Base	158		260		108	166	57	90	147	206	179	385	958	Total	512	271	783	895	674	1569	442	589 1	031	976 12	91		2650
Added	955	628	1583	628	955	1583	0 [0 8	2 0	ם מ	9 0	0 0	3166	***													
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#9 7th,	/Middl	e Har	9 7th/Middle Harbor Rd											Added	569	682	1251	0	0	0	53						4386
Base	0	0	0		1	,	0	0	0	-	0	7	7	Total	569	682	1251	0	0	0	553	389		1071	1122 2		4386
Added	350	275	625	0	0	0	604	427	1031	683	935	1618	3274														
Total	350	275	625	0		-	604	427	1031	684	935	1619	3276	#138		123	1967	- 747	991-	225	-20	-24	7	-	c	•	023-
AN OF#	Harb	or/Mi	#10 New Harbor/Mid Harbor	or Rd										Added	0	0	0		30	0	, 0	. 0	. 0	0	0	0	0
4 8 6 6		0	0		0	0	0	0	0	0	0	0	0	Total		-123	-291	,		-335	-20	•	-44	0	0	0	-670
Added	935	655	1590	0	0	0	275	350	625	399	0	1003	3218														
Total	935	655	1590	0	0	0	275	350	625	399	604	1003	3218	#158													
														Base	-422	0	-422	,	259 -	259	0	0	0	٠		-163	-844
#12 Maritime	ritime		3		/ I-	Ave./ I-880 Ramps	sdu							Added	486	0	486	0	329	329	o	0	0	0		157	972
Base	23	233	256	55	26	111	684	647	1331	637	463	1100	2798	Total	64	0	64		70	70	0	0	0	0	9-	9-	128
Added	514	302	816	0	0	0		438	688	52	76	128	1632														
Total	537	535	1072	52	26	111	934	1085	2019	689	539	1228	4430														

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Volume Type	In	NB Link Out To	ink Total	ď.	SB Link Cut To	ink Total	ä	EB Link Out To	ink Total	n t n	WB	Link Total	Total l Volume	1 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Volume	20	NB Link Out To	ink Total	Ħ	SB Link Out To	ink Total	Ħ	EB Link Out To	ink Total	In	WB Link Out To	tal	Total Volume
#159 Base Added Total	-259 329 70	000	-259 329 70	000	000	000		0 -364 0 426 0 62	-364 426 62	1 -105 5 97 8 -8	S C O O	-105 97 -8	1	728 851 123	#204 Base Added Total	000	-668 781 113	-668 - 781 113	-1043 1194 151	000	-1043 1194 151	000	000	000	000	-375 413	-375 413	2388
#160 Base Added Total	000	-105 97 -8	-105 97 -8	000	000	000		0 -259 0 329 0 70	329	364 426 62	000	-364 426 62	•	728 851 123	#207 Base Added Total	-463 525 62	0,00	-463 .525 62			-741 833 92	000	000	000	-278 308 30	000	308 308	-1482 -1666 184
#161 Base Added Total	000	-255 275 20	-255 275 20	-105 97 -8	000	-105 97 -8	-150 178 28	000	-150 178 28		000	000	, ,	510 549 39	#214 Base Added Total	000	-350 348 -2	-350 348 -2	000	000	000	000	-391 485 94	-391 485 94	-741 833 92	. 000	-741 833 92	-1482 1666 184
#165 Base Added Total	000	-660 832 172	-660 832 172	-126 158 32	000	-126 158 32	-534 ⁻ 674 140	000	-534 674 140		000	000	4 4	320 664 344	#217 Base Added Total	000	-19	-19 9 -10	-19	000	-19 9 -10	-47 67 20	000	-47 67 20	000	-47 67 20	-47 67 20	-132 151 19
#170 Base Added Total	-596 731 135	000	-596 731 135	000	-205 246 41	-205 246 41	000	000	000	000	-391 485	-391 485 94	4 4	.192 462 270	#218 Base Added Total	-39 22 -17	000	-39 22 -17	000	-70 72 2	-70 72 2	-47 67 20	000	-47 67 20	000	-16' 16	16	-172 177 5
#177 Base Added Total	000	-214 263 49	-214 263 49	-214 263 49	000	-214 263 49	-163 157 -6	000	-163 157 -6	000	157 157	-163 157 -6	8	54 41 87	#219 Base Added Total	-70 72 2	000	-70 72 2	000	-70 72 2	-70 72 2	000	0	ñ n o	ñ. r. o.	000	٠٠ ١٥ -	-150 154
#178 Base Added Total	-323 385 62	000	-323 385 62	000	-439 475 36	-439 475 36	-163 157 -6	000	-163 157 -6	• • •	-47	-47 67 20	-972 1083 111	<u>ខ្</u> គួក	#220 Base Added Total	000	-19 -10	-19	33	000	-37 39 2	000	-23 35 12	-23 35 12	ñ v 0	000	\$ 50	-84 88 4
#182 Base Added Total	-439 475 36	000	-439 475 36	-297 325 28	-439 475 36	-736 799 63	000	-297 325 28	-297 325 28	000	000	000	-1472 1599 127	52 ē. r	#225 Base Added Total	000	000	000	000	, v o	200	000	-278 308 30	-278 308 30	-283 312 29	000	-283 312 29	-566 625 59
#201 Base Added Total	000	000	000	000	000		-1043 1194 151	000	-1043 1194 151	000	-104 1194 151	3 -1043 1194 151	3 -208 2388 302	8 8 7 8 8 8 8	#226 Base Added Total	000	000	000	-16 16 0	000	-16 . 16	-375 413 38	000	-375 413 38	000	-391 430 39	-391 430 39	-782 859 77

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		Maxi	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR um Marine/Maximum Rail Alterna PM Peak Hour	t Vision 2000 /Maximum Rai PM Peak Hour	2000 Rail Hour	EIS/EII	R ative				<u> </u>	·	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	t Vision 200 /Maximum Rai PM Peak Hour	2000 EIS/ Rail Alte	EIR	ψ.		1 1 1 1 1
Volume Type	NB Link In Out Total	ink Total	S E	SB Link In Out Total	k k	i i i	EB Link In Out Total	:	WB In Out	WB Link Total Out Total Volume	Tol	al ne	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Impact Analysis Report Level Of Service	alysi Of Se	s Report rvice	! ! ! !	! ! ! !	i t i i	1 1 1 1 1
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Total			- 305-			- 0/7-				18- 18-		Đ -	# 4 Maritime	Maritime St./ 14th St.	C 15	15.9 0.392	υ C	19.9 0.762		+ 3.975 D/V
													# 5 Maritime	Maritime St./ 7th St. Extensio	B 2	5.8 0.080	В	13.7 0.677		+ 7.904 D/V
													# 6 7th St./	7th St./ 7th St. Extension	C 20	20.9 0.000	E	14.4 0.632		-6.444 D/V
													# 8 Adeline S	Adeline St./ 3rd St.	C 20	20.4 0.084	E.	64.3 0.656		+43.947 D/V
													# 9 7th/Middl	9 7th/Middle Harbor Rd	C 15	15.8 0.000	บ	16.4 0.571		+ 0.612 D/V
													# 10 New Harbo	10 New Harbor/Mid Harbor Rd	0	0.0 0.000	Ü	15.2 0.621		+15.243 D/V
													# 12 Maritime	12 Maritime St./ W.Grand Ave./ I-	В 12	12.4 0.237	ن 1	18.8 0.411		+ 6.400 D/V
													# 13 Adeline S	13 Adeline St./ 5th St./ I-880 SB	C 17	17.6 0.328	0	29.7 0.504		+12.076 D/V
													# 14 Union St.	14 Union St./ 5th St./ I-880 Nort	В 12	12.5 0.178	C 1	16.8 0.226		+ 4.303 D/V
													# 15 7th St./	15 7th St./ I-880 NB Ramps / Fron	B 11	11.5 0.135	C 1	18.2 0.397	+	6.724 D/V
													# 16 7th St./	7th St./ I-880 SB Ramps	A 2	2.6 0.113	m	5.7 0.557		+ 3.122 D/V

2.1 0.000 + 0.000 V/C C 22.1 0.639 + 0.988 D/V

υ

A 1.9 0.000

17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505

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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FISC Maximum h	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	on 2000 um Rail k Hour	EIS/EIR	IR					Ma	FISC Ximum M	ISCO/Port m Marine/M	FISCO/Port Vision 2000 Maximum Marine/Maximum Rail PM Peak Hour	2000 EIS Rail Alt Four	EIS/EIR Alternative	Q.			1 1 1
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of Service Computation Report perations Method (Future Volume Alt	Computa (Future	tion Re	eport	ative)		*	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alterna ************************************	1994 HCM (************************************	Level Of Operations	Of Service ons Method		Computation Report (Future Volume Alt	Computation Report (Future Volume Alternative)	ernativ		* *	* + +
Cycle (sec): Loss Time (sec): Optimal Cycle:	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 58	Critical Vol./Cap. (X): R = 4 sec) Average Delay (sec/veh) Level Of Service:	Critical Vol./Cap Average Delay (se Level Of Service:	11 Vol., Delay f Servi	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	() : jb) :	0.317 9.5 B	317 9.5 B	Cycle (sec): Loss Time (sec): Optimal Cycle:	ec):	100 8 (Y+R 58	11 4.	. ,	tical Vc rage Del	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): /veh):	J	0.762 19.9 C	
Approach: Movement:	North Bound L - T - R	South Bound L - T -	lound - R	Eas	East Bound	# H	3	Bound R	Approach: Movement:	2 1	Bound	son .	South Bound		East Bound	und - R	West L -	West Bound	
Control:	Protected Trollinda	-	ted	Pro	Protected	<u>:</u>	Protected Thelude	ed	Control:	 Protected Include	otected Include		Protected Include	<u>:</u> :	Permitted Ov1	 ted	Per	Permitted	p
Min. Green: Lanes:	10 20 20 1 0 1 1 0	100	1 0	10,	20	20	ຸິ	00	Min. Green: Lanes:	10 20	1 0	10	20	20 1		20	10	20	20
Volume Module			-	<u> </u>	1	<u>:</u>	:	-	Volume Module	:	:	<u>-</u>		<u>:</u> <u>-</u>					:
Base Vol: Growth Adi:	5 590 0 1.00 1.00	0 0 109	1.00	1.00 1.00		50	00 1.00	1.00	Base Vol: Growth Adj:	0 414 1.00 1.00	4 28 0 1.00	105	132	0 0 1.00 1.00	0 0	1.00	92	000	290 1.00
Initial Bse:	5 590	0 0	0 6	0 5	00	20	0 0	00	Initial Bse:	0 414	4 28	105	132	0 0	0 0	0 68.5	95	0 0	290
PasserByVol:	0 0	0 0 0		0	00	00			PasserByVol:				0		0	0	00	00	0
Initial Fut:	944	۰ ;			0 8		0 0	0 6	Initial Fut:	295 669	9 28	105	274	68 100		382	92		290
PHF Adj:	1.00 1.00 1.00	0 1.00 1.00	1.00	1.00.1	80.	1.00		1.00	PHF Adj:	1.00 1.00					1 ~1	1.00	1		1.00
PHF Volume:	944	0 319	92	160	0 0	000	00	00	PHF Volume:	295 669	9 28	105	274	68 100	000	382	92		290
Reduced Vol:	944	0 31	50	160	0	20	00		Reduced Vol:			10	274	7		382	92		290
PCE Adj:	1.00	1.00				٠.	н.	1.00	PCE Adj:		0 1.00				00 1.00	1.00	1.00 1.		1.00
MLF AGJ: Final Vol.:	1.00 1.05 1.05 5 992 0	0 0 335	96	160	90.1	20	0 .1 0	00.1	Final Vol.:	295 702		105	288	71 100	100 001	382	92	00.1	290
Caturation Flow Module.				-	1 1 1 1 1 1	<u>:</u> ::			Saturation Flow Module:	low Modul				-	1				:
Sat/Lane:	1900 1900 1900	0 1900 1900	1900	1900 1	1900 19	1900 19	1900 1900	1900	Sat/Lane:	1900 1900	0 1900	1900	1900 19	1900 1900 0.97 0.58	00 1900	1900	1900 19	1900 1	1900
Lanes:	2.00	1.00		1.00 (Lanes:	1.00 1.92						0.79	1.00 0.		1,00
Fillat Sac.:	0000 0001		- }		- 1		1				- 1	=	- :	<u>,</u> ÷) (1 :	}
Capacity Anal	Capacity Analysis Module: Vol/Sat: 0.00 0.26 0.00	0 0.00 0.12	0.12	00.0 60.0		0.03 0.	00 0.00	0.00	Capacity Analysis Vol/Sat: 0.16	lysis Module 0.16 0.19	ule: 9 0.19	90.0	0.10 0.	0.10 0.44	14 0.00	0.44	0.12 0.	0.00	.18
Crit Moves:	* 6	* 6				* * * *	9	6	Crit Moves:	****	20.00	,	* 0	* * * * * * * * * * * * * * * * * * * *		,			S
Green/cycle: Volume/Cap:	. 0	0 0.00 0.24	0.24	0.44	00.0		000		Volume/Cap:	0.84 0.74	0	=	. n	_	0.00	0.61	0.23 0.	0.00	0.34
Level Of Service Module:	vice Module:			-		_		-	Level Of Serv		Ü		;	_		-			-
Delay/Veh:	18.7 6.4 0.0	9.9 0.0 0	9.6	23.3	0.0 21	21.4 0	0.0	0.0	Delay/Veh:	36.1 23.8	8 23.8	26.7	23.3 23	23.3 20.4	4 0.0	5.5	8.3 0	0.0	9.0
AdjDel/Veh:	18.7 6.4			23.3			90.	•	AdjDel/Veh:			26.7				5.5			0.6
Queue: 0 14	*	0 0 5	2	4	0 * * *	1	0 0	0 * * * * *	Oueue:	9 1	9 3	******	7	2	3 O E	9 ***	1 * * * *	0	۰ * *

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A-PM.CMD		Tue Nov 5, 1	1996 10:49:51	:49:51			Page	ge 8-1	A-PM.CMD		Ž	Tue Nov 5,	1996 10:49:51	:49:51			Page	9-1
1	FI	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour	t Vision 2000 //Maximum Rai PM Peak Hour	0 EIS/	EIR rnative	! ! !				Maxi	FISCO, mum Ma:	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alterna PM Peak Hour	t Vision 200 /Maximum Rai PM Peak Hour	0 EIS/EIR 1 Alternative	R lative			
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternat) Intersection #5 Maritime St./ 7th St. Extension	Level Of Service Computation Report genations Method (Future Volume Ail me St./ 7th St. Extension	Comput (Futur	atten e Volue	Computation Report (Future Volume Alternativ		ĵ,		1 •	Level Of Service 1994 HCM Operations Method	Level Of perations	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative)	Comput (Futur	ervice Computation Report Method (Future Volume Alternative)	port Altern	ative)	* * * * * * * * * * * * * * * * * * * *	* *
Cycle (sec): Loss Time (sec): Optimal Cycle:	100	Critical Vol./Cap. (X): (Y+R = 4 sec) Average Delay (sec/veh)	Critical Vol./Cap Average Delay (se Level Of Service:	****** al Vol e Dela;	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): (veh):		0.677 13.7 B	*	()	* 62	4	Critical Average I Level Of	Critical Vol./Cap. (X): sec) Average Delay (sec/veh) Level Of Service:	Cap. (x) (sec/veh ce:	h):	0.632 14.4 B	0 4 E
Approach:	North Bound L - T -	South Bound East Bound R L - T - R L - T - R	Sound - R	i i	East Bound	ınd R	West L - 1	West Bound - T - R	Approach: Movement:	North Bo	und - R	South Bound	Bound - R	. Eas	East Bound	, " \	West Bound	und - R
Control: Rights:	Protected Include	 Protected Ov1	ted		Protected Ovl		Prote Inc	Protected Include	Control: Rights:	 Protected Include	ed de	: H	1		red	<u>-</u>	rot	1
Min. Green: Lanes:	10 20 2 0 2 0	0 0 20	0 1	7 70	° °	20	0	0 0	Min. Green: Lanes:	0 0 0	00	2 0 0	0 20	2 0	20	20 0 0 1-11	0 20	20
Volume Module:			75	223		74	c	0	Volume Module Dase Vol:	0 - ë	- 0	31	0	•	0	- 0	. 0	- 0
Growth Adj: Tritial Rep.	7.	00 1.00 1.00	ri -		1.0	1.00	1.00 1.00	1.0		1.00 1.0	1.00	1.0	1.0	1.00			1.00 1.00	1.00
Added Vol:	32	0 30				795	0 (00	0 0	683	0 418	562	373	0 0	0 265	494
PasserByVol: Initial Fut:	0 0 766 325	0 0 0	293		0	698	. 0		0 rasserby or: 0 Initial Fut:		0	714		562			0 265	494
	1.00				1.00 1.00	1.00	1.00 1.00	00 1.00	O User Adj:	1.00 1.00	1.00	1.00 1.00	0 1.00	1.00	1.00 1.	1.00 1.	1.00 1.00	1.00
PHF Adj: PHF Volume:	766 325		293		00.1						0	•		562			0 265	494
Reduct Vol:	0 0 766 325	0 0 0	293	447	00	0	00	00	0 Reduct Vol: 0 Reduced Vol:	00	00		0 418	562	0 373	, 0	0 265	494
	1.00	1.00			1.00 1.00	1.00				1.00 1.00	1.00	1.00 1.00	0.1.00	1.00	1.00 1.	1.00 1.	1.00 1.00	1.00
	1.03 1.05 1.00 789 342 0	00 1.00 1.05 0 0 322	2 293	- :	1.03 1.00 460 0	869	0 0	7	o Final Vol.:	0	30.	4		579		_	0 291	543
TE	1	1900 1900 1900 1900 0.00 0.00 0.00 2.00 0	1900 0.85 0.85 0.100	-	1900 1900 0.95 1.00 2.00 0.00 3610 0	1900 1900 1.00 1615	1900 1900 1.00 1.00 0.00 0.00	190	Saturation Sat/Lane: Adjustment: Lanes: Final Sat.:	Flow Module: 1900 1900 1.00 1.00 0.00 0.00	1900	1900 1900 0.95 1.00 2.00 0.00 3610 0	0 1900 0 0.85 0 1.00 0 1615	1900 0.95 2.00 3610	1900 19 1.00 1. 2.00 0.	1900 1900 1.00 1.00 0.00 0.00	1900 1900 1.00 0.90 0.00 1.05 0 1790	1900 0.90 1.95 3340
Capacity Analysis Module: Vol/Sat: 0.22 0.09 0 Crit Moves: **** Green/Cycle: 0.29 0.49 0 Volume/Cap: 0.75 0.18 0	lysis Module: 0.22 0.09 0. **** 0.29 0.49 0.	0.00 0.00 0.20 0.00 0.00 0.20 0.00 0.00	3 0.18 0 0.63		0.13 0.00 0.43 0.00 0.30 0.00	0.54	0.00 0.00	00.00	Capacity Analysis Vol/Sat: 0.00 Crit Moves: Green/Cycle: 0.00 Volume/Cap: 0.00	1ysis Modul 0.00 0.00 0.00 0.00	0.00	0.20 0.00 0.41 0.00 0.50 0.00	0 0.26 **** 0 0.41 0 0.63	0.16 *** 0.25 0.63	0.10 0. 0.51 0.	0.00 0.00	00 0.16 **** 00 0.26	0.16 0.67 0.24
Level Of Service Module Level Of Service Module Delay/Veh: 22.8 9.1 User DelAdj: 1.00 1.00 AdjDel/Veh: 22.8 9.1 Queue: 21 5	ice Module: 22.8 9.1 1.00 1.00 1 22.8 9.1 21 5	0.0 0.0 22.8 1.00 1.00 1.00 0.0 0.0 22.8 0 0 8	3 5.5 1.00 8 5.5 8 4 4	12.2	12.2 0.0 1.00 1.00 12.2 0.0 8 0	7.4	0.0 0.0 1.00 1.00 0.0 0.0	1.0	Level Of Service Module Delay/veh: 0.0 0.0 User Delad; 1.00 1.00 Adjbel/veh: 0.0 0.0 Queue: 0 0 0	.vice Module 0.0 0.0 1.00 1.00 0.0 0.0	1.00	14.4 0.0 1.00 1.00 14.4 0.0	0 16.6 0 1.00 0 16.6 0 10	22.4 1.00 22.4 15	8.6 0 8.6 0 8.6 0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 22.0 0.0 22.0 0.0 22.0 0.0 8 8	4.3 1.00 4.3 6

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Paraimum Marine/Maximum Rail Alternative	0.656 64.3 64.3 F. F. F. F. F. F. F. F. F. F. F. F. F. F	1994 HC ******** sec): Lb: Norti Li 10 10 11 11 11 11 11 11 11 11 11 11 11	Maximum Marine/Maximum Rail Alternativ PM Peak Hour Level Of Service Computation Report M Operations Method (Future Volume Alt Middle Harbor Rd Critical Vol./Cap. 8 (Y+R = 4 sec) Average Delay (sec. 58 Level Of Service: h Bound South Bound East Bon T R L T R L T PECTED FOR THE COMPONENT OF THE COMPONE		
Devel Of Service Computation Report Perations Method (Future Volume Alternative) 10	0.656 64.3 64.3 F************************************	1994 HCM Operation	al Of Service Computations Method (Future Harbor Rd Critica Cr	* * * * * *	
Critical Vol. (App. (X): 0.65% Critical Vol. (App. (X): 0.65% Critical Vol. (App. (X): 0.65% Critical Vol. (App. (X): 0.65% Critical Vol. (App. (X): 0.65% Level Of Service: 1 Level Of Service: 1 Level Of Service: 1 Level Of Service: 2 Loude	0.656 64.3 64.3 sst Bound T - R it Phase Include 20 20	Intersection #9 7th/Middle Cycle (sec): 100 Loss Time (sec): 8 (Y Optimal Cycle: 58 ***********************************	Harbor Rd . Critica . (+R = 4 sec) Average	* *	*
Critical Vol./Cap. (X): 643. 2 (Y+R = 4 sec) Average Delay (sec/veh): 643. Level Of Service: 1 Level Of Of Of Of Of Of Of Of Of Of Of Of Of	0.656 64.3 F************************************	Cycle (sec): 100 Loss Time (sec): 8 (Y Optimal Cycle: 58 ************************************		(X): /veh):	
Cound South Bound East Bound West Bound South Bound East Bound West Bound South Bound East Bound West Bound East East East East East East East East	64.3 ********* Sst Bound T - R Lit phase Include 20 20	sec): 1e: ********************************	+R = 4 sec) ********* South B L		571
South Bound East Bound West Bound Ne	sst Bound T - R It Phase Include 0 1 0	North Bound L T Protected Include 10 0 1 0 0 1 0 0	South B R L - T Protec Incl	f Sprying.	16.4
New Courty Bound East Bound West Bound	r - R - T - R - T - R 	North Bound L T	South Bound L T R	*************	** ***
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ude Include In	Include 20 20	10 0 0	Include 0		
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122 43 0 15 30 14 13 89 39 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	le: 0			0
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122 43 628 15 30 14 13 89 39 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 1.00	1.00 1.00	1.00 1.0	1.00 1.00 1.00 1.0	1.00
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122 43 628 15 30 14 13 89 39 100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 0	1: 0 0	0	0 0 0	-
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	39	ut: 4 0	0	589 15 260 42	
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1900 1900 1900 1900 1900 1900 1900 1900	_	Saturation Flow Module:			
0.28 1.00 1.00 1.00 0.95 0.93 0.93 0.95 0.90 0.22 0.12 1.84 0.04 1.00 0.52 0.48 0.84 0.39 408 238 3478 84 1805 916 851 1512 663 1.15 0.31 0.19 0.19 0.19 0.02 0.02 0.02 0.06 0.06 0.06 0.28 0.20 0.20 0.20 0.20 0.20 0.20 0.20	1900 1900		1900 1900 1900 1900	1900 1900 1900 1900	1900
0.22 0.12 1.84 0.04 1.00 0.52 0.48 0.84 0.39 408 238 3478 84 1865 916 851 1512 663 165 165 165 165 165 165 165 165 165 165		ment: 0.95 1.00	1.00 1.00 1.00	1.00 0.95	
1e: 0.31 0.19 0.19 0.19 0.02 0.02 0.02 0.06 0.06 0.28 0.20 0.20 0.20 0.20 0.20 0.20 0.20 1.12 0.95 0.95 0.95 0.08 0.08 0.09 0.29 0.29 e:	0.39 0.77	1.00 0.00	0.00 0.00 0.00	1.95 0.05 1.00	
0.31 0.19 0.19 0.19 0.02 0.02 0.02 0.06 0.06 0.06 0.06 0.06	- 1	Final Sac.: 1805 0 1615	15 0 0 0 0	0 3704 96 1805 3791	6 _
0.31 0.19 0.19 0.19 0.02 0.02 0.02 0.06 0.06 0.06 0.06 0.06		Capacity Analysis Module:		111111111111111111111111111111111111111	
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0.28 0.20 0.20 0.20 0.20 0.20 0.20 0.20	***	*		***	
1:12 1:12 1:12 0:95 0:95 0:08 0:08 0:09 0:29 0:29 1:29 0:29 0:29 0:29 0:29 0:29 0:29 0:29 0		: 0.38 0.00	0.00 0.00 0.00	0.00 0.29 0.29 0.25 0.54	0.54
ervice Module:	0.29 0.29	Volume/Cap: 0.01 0.00 0.57	0.00 0.00 0.00	0.00 0.57 0.57 0.57 0.21	0.21
	! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	T 2000 1 Of Committee and Comm			-
	22.0 22.0	Delay/Veh. 12 6 0 0 17 0	6		,
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1. 1 00 1 00	0.0 0.0 0.0	19.9 22.4	
21.0 21.0 21.0 22.0 22.0		12.6 0.0	0.0 0.0 0.0	1:00 1:00 1:00 1:00 1:00 0 0 0 0 0 0 0 0	1.00 7.6
Queue: 3 51 9 3 22 1 1 0 0 2 1	1 2	0	0 0	17 17 17 17 17	

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Maximum Marine/Maximum Rail Alternative PM Peak Hour Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #10 New Harbor/Mid Harbor Rd		FISCO,	FISCO/Port Vision 2000 EIS/EIR	n 2000	RTS/E	(R	1 1 1 1 1 1	1 1 1 1 1	9 3 4 9			FISC	0/Port	FISCO/Port Vision 2000	000 EIS/EIR	IR arive			
199	Maxi	num Maı	Maximum Marine/Maximum Rail PM Peak Hour	m Rail Hour	Alternative	native					Σ	Maximum Marine/Maximum Rail PM Peak Hour	arine/M PM	/Maximum Rai PM Peak Hour		,			
*****	Le HCM Ope	evel Of eration ******	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ##10 New Harbor/Mid Harbor Rd	Computal Future	tion Re Volume	port	native)		1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps	1994 HCM ********	Level Of Service HCM Operations Method	Of Servons Met	Service Compus Method (Fut.	Service Computation Report Method (Future Volume Alternative)	port Altern ************************************	native)	* * * * * * * * * * * * * * * * * * * *	*
<pre>Lycie (sec): Loss Time (sec): Optimal Cycle:</pre>	100	(Y+R =	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	l Vol., Delay f Servi	/Cap. ((sec/v) ce:	x): eh):	0.621 15.2 C	U 2 D	Cycle (sec): Loss Time (sec): Optimal Cycle:	: (ve	100 10 (Y+R 70	11.	Criticec) Average Level	100 (Y+R = 4 sec) Average Delay (sec/veh) 70 Level Of Service:	Cap. (X) (sec/veh	c) : eh) :	0.411 18.8 C	11 8 0
Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R	North Bound	und - R	South Bound	und	. Eas	East Bound		West Bound	und - R	Approach: Movement:	North L - 1	North Bound	Sou	South Bound	R L -	East Bound			ound - R
Control:	Protected	pa pa	Protected	ed	 Pro	Protected	<u>:-</u>	Protected Trolude		Control:	Protect	Protected Include		Protected Include	 Pro I	Protected Include	<u> </u> -	Protected Include	ted
kignus: Min. Green: Lanes:	1000	20	0 0 0	0 0	, o	20	20 10	0	0 0	Min. Green: Lanes:	10 2	20 20 0 1 0	100	20	20 10 0 1 0	20	20	10 20	1 0
Volume Module:					<u>:</u>		<u>-</u>		- - - - -	Volume Module		:		:		1			
Base Vol:	0 0	0 0	0 0	1.00	1.00 1.00		1.00 1.0	0.00	1.00	Base Vol: Growth Adj:	0 23 1.00 1.00	23 0 00 1.00	1.00	23 1.00 1.	23 20 1.00 1.00 1	454 2 1.00 1.	210 1.00 1.	0 624 1.00 1.00	1.00
	0	0	0	0 0	0 0		ſ	0 4	0 0	Initial Bse:	0 0	23 0	ο c	23	23 20	454 2	210	0 624	13
Added Vol: 3 PasserBvVol:	346	589 0			0	1 0	0 0	. 0	0	PasserByVol:	o o			. 0			0	. 0	
: :	346 0	589	0	0			٣		0	Initial Fut:	438		6 6		500			52 624	
User Adj: 1.	1.00 1.00	1.00	1.00 1.00	1.00	1.00.1	1.00	1.00 1.00	00 1.00	1.00	User Adj: PHF Adi:	1.00 1.00	1.00	1.00	1.00 1.	1.00 1.00 1	1.00 1.	1.00 1.	1.00 1.00	1.00
н :	346 0	589	0	0	0		٣	5 4	0	PHF Volume:	438				20		460	62	11
Reduct Vol:	0 0	0 6	00	00	0 0	0 12	0 0 260 395	o ñ	0 0	Reduct Vol: Reduced Vol:	438	23 76	D 0v	23	23 20	454 4	460	0 0 52 624	13
	٠,	1.00	1.0	1.00	1.00 1.00		' - ;	00 1.00	1.00	PCE Adj:	1.00 1.00		1.00		1.00				
	1.00 1.00	1.00	1.00 1.00	1.00	1.001		Η,	00 1.05	1.00	MLF Adj:	1.03 1.00	00.1 00.	1.00	1.00 1.	1.00 1.00 1	1.10 1. 499 5	1.10 1.	52 655	1.05
Final Vol.: 3	346 0	689				2	<u> </u>	*		rijar vor:	ij			-		į		- ;	i
- 답	ow Module:	1900	1900 1900	1900			1900 1900	0 1900	1900	Saturation Fl Sat/Lane:	low Module	le: 00 1900	1900	1900 1900	1900	1900 19	1900 19	1900 1900	1900
Adjustment: 0. Lanes: 1.	1.00 0.00	1.00	0.00 00.00	00.00	0.00	1.00	; , i		0.00	Lanes:			1.00		1.00				
_	1805 0	1615	0	0	0	1900 1	1615 1805	5 3800	0	Final Sat.:	3610 388	38 1284	1805	884 8	884 1805 2	2632 26	2669 18	1805 3720	80
- E	ysis Module	e: 0.36	00.00.00	00.00	0.00 00.0	í	0.16 0.22	2 0.00	00.0	Capacity Analysis Module: Vol/Sat: 0.13 0.06 0	lysis Modul 0.13 0.06	lule: 06 0.06	00.00	0.03 0.	0.03 0.01 0	0.19 0.	0.19 0.	0.03 0.18	0.18
Cric moves: Green/Cycle: 0. Volume/Cap: 0.	0.31 0.00 0.62 0.00	0.66	0.00 0.00	0.00	0.00	0.26 0	0.9	5 0.61	0.00	Green/Cycle: Volume/Cap:	0.24 0.29	29 0.29	0.15		0.20 0.15 0 0.13 0.07 0	0.36 0. 0.52 0.	0.36 0.	0.10 0.31 0.29 0.57	0.31
Level Of Service	Service Module:					1	23.0 18	7 4 9	- 0	Level Of Service Module	vice Modul	11e:	23.7	21.2 21.2	23.4	16.5 16	16.5 27	27.2 19.3	19.3
Delay/ven: 20 User DelAdj: 1.	-	1.00	_	1.00	1.001			0 1.00	1.00	User DelAdj:			1.00		1.00			1.00 1.00	
AdjDel/Veh: 20	20.6 0.0	6.3	0.0	0.0	0.0	17.9 2	23.0 18.	6.4 6	0.0	AdjDel/Veh:	21.9 17.2		23.7	21.2 21.2	23.4	16.5 16 11	16.5 27	27.2 19.3	19.3

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Green/Cycle: Volume/Cap:	_	0.56	0.12	20 0.20	0.2	3 0.48		0.28	•	0.28	Green/Cycle: Volume/Cap:	0.00 0.33		0.00 0.33	0.33	0.20 0.	0.20 0.20	20 0.36	36 0.36 13 0.05	0.36
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Capacity Analysis Module:	ysis Module	0.11	0.00 00.00	0.17	_	04 0.00	- 6	00 0.02	0.02	Capacity Analysis Module: Vol/Sat: 0.00 0.00 0	lysis Modu] 0.00 0.00	le: 0.00	0.00 00.00	0.00	0.00 0.11			0.21 0.	00.00
Crit Moves: Green/Cycle:	0.20 0.27	0.27	0.13 0.00	0.50	0.30 0.50	50 0.00	0 0	00 0.20	0.20	Crit Moves: Green/Cycle: Volume/Cap:	0.00 0.00	0.00	0.00 0.00	0.00	0.00 0.76	0.76	0.19 0	0.95 0.	0.00
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1/veh:			24.2 0.0				. 0		21.0	AdjDel/Veh:			0.0 0.0		0.0 2.1		24.3		0.0
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The controlled The	The controlled The	ı	h Bound T - R	outh Bound	East Bound - T - R	West Bound	Optimal Cycle	* * * * *	Leve	1 O£ ****	* * * * * *	۰۰۰۰۰۰ ۲
The color of the	Tricilude Tric	:	ntrolled	Uncontrol	Stop Sign	1	Approach: Movement:	North Bound L - T - R	South Bound - T -	м Э	73	Bound T - R
	Right		nclude 1 1 0	Include 0 2 0	Include 0 0 0		Control:	Split Phase	Split Phase	=		ected
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Adjustment: 0.95 0.94 0.95 0.99 0.95 1.00 1.00 0.95 0.94	Adjustment: 0.95 0.94 0.95 0.99 0.95 1.00 1.00 0.95 0.94	Critical Gap Module		2	•		Sat/Lane:		1900	1900 1900	1900	
	Santa Sata	MoveUp Time:xxxxx x	xxxxx xxx	2.1 xxxx xxxxx	xxxxx xxxx xxxxx	.4 xxxx	Adjustment:	0.94	5 0.99	0.95 1.00	0.95	
		Critical Gp:xxxxx x		5.5 xxxx xxxxx	XXXXX XXXX XXXXX	.0 xxxx 5.	Lanes:	1.18	96.0	1.00 1.98	1.00	
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XXXX XXXX XXXX XXXX XXXX XXXX XXXX X	XXXX XXXX XXXX XXXX XXXX XXXX XXXX X	Potent Cap.: xxxx x	XXXX XXX	861 xxxx xxxxx	XXXX XXXX XXXX	xxxx 1	Vol/Sat:		0.07	0.05 0.10	0.08	
xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx			XXXXX XXX	1.00 xxxx xxxxx	XXXX XXXX XXXX	xxxx	Crit Moves:	* * *		* * * *		
			XXXXX XXX	1 xxxx x	x xxxx xxxxx	2 xxxx 1	Green/Cycle:	0.20	0.33	0.10 0.24	0.12	
4.2 xxxx xxxxx xxxxx xxxxx xxxx xxxx xxx	4.2 xxxx xxxxx xxxx xxxx xxxx xxxx xxxx						Volume/Cap:	0.64	0.22	0.48 0.41	0.64	
A * * * * * * C * A Delay/Veh: 21.6 25.1 25.1 19.4 15.6 15.6 29.0 20.9 20.9 31.4 22.3 LT - LTR - RT LT - LTR - RT LT - LTR - RT Veer DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	A	Cropped Del. xxxxx x	aule:	4 2 xxxx xxxxx	*****	R xxxx	Serve Of Serve	rice Module.				
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.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx x	.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx x		LTR - RT	LT - LTR - RT	LT - LTR - RT	- LTR -	User DelAdj:	1.00	1.00	1.00 1.00	1.00	
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0.0 0.1 0.0	0.0 0.1 0.0 15.1	*		•	•	*	****	***********	***********	***********	********	*******
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1 a Die J./-5 Page 1-1 Bage 1-1 B-AM.CMD Tue Nov 5, 1996 13:06:45	PIS Minimum Minimum	Zone Rate Trips # Subzone Amount Units In Out In	Trips Trips Total \$ Of Zone 23 Subtotal	24 SP Rail Term 1.00 Truck External 175.00 180.00 175 20 122 2.3 20 122 2.3	112 20 132 2.5	26 67 15 82 1.6 67 15 82 1.6	27 7th St Harbr 1.00 Truck External 354.00 377.00 60 13 73 1.4 Zone 27 Subtotal	28 Outer Harbor 1.00 Truck External 457.00 487.00 457 Zone 28 Subtotal	134 26 160 3.0 TOTAL	. 159 31 190 3.6 . 159 31 190 3.6	206 40 246 4.7 . 206 40 246 4.7	24 16 40 0.8 . 24 16 40 0.8	46 49 95 1.8 . 46 49 95 1.8	60 64 124 2.3 . 60 64 124 2.3	72 77 149 2.8 . 72 77 149 2.8	93 99 192 3.6 . 93 99 192 3.6	226 241 467 8.8 . 226 241 467 8.8	197 210 407 7.7
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1 1 1 1 1		! ! !	Min	FISC	0/Por Marin	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	on 20 mum R	00 EI£	S/EIR terna	tive			: ! !	1 1 1	: ! !	1		Mir	FISC	/Port farine	PISCO/Port Vision 2000 BIS/BIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	n 2000 um Rai Hour	EIS/	EIR ernati	ve ve			
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			Min	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	/Port arine/	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Altern AM Peak Hour	n 2000 nm Rai Hour	EIS/	EIR ernati	0 0				FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	IS/EIR Alternative	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Volume Type	i i	NB Link Out Total	ota 1	=	SB Link Out Total	k otal		EB Link Out Total	nk Fotal	<u> </u>	WB Link Out To	nk Total	Total Volume	Impact Analysis Report Level Of Service	rt	
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Added		000	000		235	428	352	303	655	110		227	1311	# 3 Maritime St./ Burma St. B 6.3 0.089	B 9.0 0.3	35 + 2.643 D/V
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														# 5 Maritime St./ 7th St. Extensio B 12.7 0.071	71 B 10.8 0.372	12 -1.871 D/V
														# 6 7th St./ 7th St. Extension B 12.3 0.009	09 C 18.9 0.571	1 + 6.608 D/V
														# 7 Middle Harbor Rd. / Gate 2 B 6.6 0.167	67 C 15.2 0.689	V/G 99:566 D/V
														# 8 Adeline St./ 3rd St. B 8.7 0.064	64 E 47.9 0.618	.8 +39.207 D/V
								,						# 9 7th/New Middle Harbor 0.0 0.000	00 B 9.8 0.313	3 + 9.800 D/V
														# 12 Maritime St./ W.Grand Ave./ I- B 12.0 0.242	42 C 17.8 0.561	1 + 5.851 D/V
														# 13 Adeline St./ 5th St./ I-880 SB C 18.3 0.236	36 C 20.8 0.731	1 + 2.508 D/V
														# 14 Union St./ 5th St./ I-880 Nort C 16.4 0.104	04 C 17.2 0.146	6 + 0.792 D/V
														# 15 7th St./ I-880 NB Ramps / Fron B 13.0 0.366	66 C 21.7 0.576	6 + 8.695 D/V
														# 16 7th St./ I-880 SB Ramps A 0.1 0.020	20 A 1.4 0.403	3 + 1.306 D/V

C 3.2 0.000 + 0.000 V/C C 21.1 0.498 + 1.220 D/V

A 2.8 0.000

17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 19.9 0.237

B-AM.CMD		Ţ	Tue Nov 5, 1	1996 13:06:46	3:06:40	9		<u>a</u>	Page 6-	·1	B-AM.CMD		2	Tue Nov	5, 1996	13:06:46	46		щ	Page 7-1	-1
	Mini	FISCO,	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	t Vision 200 le/Minimum Ra AM Peak Hour	DO EIS,	/EIR ternati	e A					Míı	FISCC	/Port arine/	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Altern AM Peak Hour	2000 EI Rail A	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	ive	; ; ;	1	! ! !
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	evel Of eration	f Service ns Method	Comput (Futur	cation re Volu	Computation Report (Future Volume Alternative)	ernati	* * *	*	* *	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #4 Maritime St./ 14th St.	1994 HCM Ope.	Level Of Service HCM Operations Method	Of Service ons Method	ice Com hod (Fu ******	putatic ture Vo	Computation Report (Future Volume Alternative)	ternari ************************************	: :	[! * ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !
Cycle (sec): Loss Time (sec): Optimal Cycle:	10	10 8 (Y+R = 8	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	Critic Averaç Level	Critical Vol./Cap Average Delay (se Level Of Service:	Critical Vol./Cap. Average Delay (sec. Level Of Service:	(X): :/veh):		0.285 9.0 B		Cycle (sec): 100 Loss Time (sec): 8 (Y+R = 4 sec) Optimal Cycle: 70	100 ec): 8 e: 70	0 8 (Y+R 0	* 11		********* Critical V Average De Level Of S	Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:	(X): (Veh):	*	******* 0.818 21.2	* * *
Approach: Movement:	North Bound L - T -	und - R	South Bound	Bound - R	i i	East Bound	ound - R	h	West Bound	bi R	Approach: Movement:	Nor	ound - R	Soul	South Bound	d R	East Bound	ound - R	Wes L	West Bound	, pr
Control: Rights:	Protected Include		Protected	otected	<u> </u>	Protected Include	ed de	Pro Dro	Protected Include		Control:	 Protected Include	ed	 Pr	Protected Include	<u>-</u> 	Permitted Ovl	ted	Pe T	Permitted	p
Min. Green: Lanes:	10 20	20	10 20	0 20	10	0 70	1 0	。。	000	00	Min. Green: Lanes:	10 20 1 0 1	20	10	20	0 0	00	0 0	10	20 0 1	20
Volume Module:	.	=		!	<u>:</u>		-	<u> </u>		<u> </u>	Volume Module		- :	- :				- '	: 3		- :
Growth Adj:	1.00 1.00		_	1.00		1.0	1.00			1.00	Growth Adj:	÷.	1.00				1.00 1.00	1.00	1.00 1	.00.	
Added Vol:	0 282	0	0 391	1 224	14	0 0	n 0	0			Added Vol:	392 167	ξ, O	103	261 251	140 1	115 0	364	77	0 0	0
PasserByVol:	0 1	0 0	0 0	0 20	0 77	0 0	0 1		0 0	0 0	PasserByVol:		0 (0 5				0	0 (0 (0 ;
untial fut: User Adj:	1.00 1.00	1.00	1.00 1.00			0 1.00	1.00	1.00.1	° °.	1.00	Initial fut: User Adj:				1.00 1		115 0	364	22 1.00 1	.00	1.00
PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1.00	0 1.00 8 224	1.00	0 1.00	1.00	1.00.1	°. 0	00:	PHF Adj: PHF Volume:	1.00 1.00 392 258	1.00	1.00 1	1.00 1	1.00 1.	1.00 1.00	364	1.00'1	.00.	1.00
Reduct Vol:	0 0	0 0	0 0			0 0	0 1	0 (0 0	0 (Reduct Vol:		0 6	0					•	0	0
PCE Adj:		1.00			-	0 1.00	1.00	-	8.	1.00	Reduced vol: PCE Adj:	1.00 1.00	1.00	1.00 1	1.00	140 1 1.00 1.	115 0	364	22 1.00 1	1.00 1	1.00
MLF Adj: Final Vol.:	1.00 1.05 5 378	1.05	1.00 1.05 0 711	5 1.05 1 235	1.00	0 1.00	1.00	1.00 1	.00	1.00	MLF Adj: Final Vol.:	1.00 1.05 392 271	1.05	1.00 1			1.00 1.00 115 0	1.00 364	1.00 1 22		1.00
Cathernation of the Module	-				<u>:</u>		-		1					<u> </u>	1 1 1			1			
Sat/Lane:		1900	1900 1900	0 1900		1900 1900	1900	1900 1	1900 1	1900		1900 1900	1900	1900 1	1900 18	1900 19	1900 1900	1900			1900
Lanes: Final Sat.:	2.00		1.00 1.50			0.00	1.00	800		00.0	Lanes: Final Sat.:		489					0.76	1.00 0 1064	0.00	1.00 1615
Capacity Ana				:	<u>:</u>		-	<u>:</u>		-	Capacity Analysis	 ysis Module	- :	<u>:</u>		=			1	1	-
Vol/Sat:	0.00 0.10	00.0	0.00 0.26	6 0.26	0.08	9 0.00	00.0	0.00	0.00	00.0	Vol/Sat:	0.22 0.08	0.08	0.06	0.19 0.	0.19 0.35	0.35 0.00	0.35	0.02 0	0.00	9.05
Green/Cycle: Volume/Cap:	0.10 0.48	0.00	0.00 0.62	2 0.62	0.20	0 -	0.20	0.00.0	0.00.0	00.0	Green/Cycle: Volume/Cap:	0.27 0.33	0.33	0.16 0		0.23 0.4	0.43 0.00 0.82 0.00	0.69	0.43 0	0.00.0	0.43
Level Of Ser		-	-		<u>.</u>		-	-		-	Level Of Service Modul	rice Module	-			<u>:</u> :	! ! ! !	-			:
Delay/Veh: Haer Deladi	26.2 9.7	0.0	0.0 6.4	6.4		22.9 0.0	20.7	0.0	0.0	0.0	Delay/Veh:	29.7 15.9	15.9	24.2 2	28.2 28	28.2 22.5	22.5 0.0	5.1	10.8	0.0	11.2
AdjDel/Veh:	26.2 9.7	0.0	0.0 6.4			0.0	20.7	1	0.0	0.0	AdjDel/Veh:		15.9				0.0 5.	5.1	10.8		11.2
Queue:	Queue: **********************************	0	0 10	0	7	0 ***	0 * * * * *	0 * * * * * *	•	o *	Queue:	12 6	****	3	15	5	4 * * * * * *	2*****	0 * * * *	0	r :

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		FISCO																	1 1 1 1
	W	nimum M	FISCC/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	on 200(mum Rai k Hour	O EIS/E	IR rnative					Σ.	FISC(inimum h)/Port arine/ AM	FISCO/Port Vision 2000 mum Marine/Minimum Rail AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	R native			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #5 Maritime St. / 7th St. Extension	994 HCM OF	Level O peration terretain	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alt #5 Maritime St. / 7th St. Extension	Computa (Future *******	Computation Report (Future Volume Alternative	eport e Alteri	native)	*	*	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	Le 1994 HCM Ope ************************************	Level Of Service HCM Operations Method ************************************	of Servins Metl	ervice Computethod (Futures)	Level Of Service Computation Report perations Method (Future Volume Alternative) ************************************	port Altern	ative)) * * * * * * * * * * * * * * * * * * *	:
	******	******	*******	******	*******	******	******	******	********	***************************************	******	******	*****	******	********	******	*****	******	*********
Cycle (sec):	10		•	Critica	Critical Vol./Cap. (X):	/Cap. (:	: (x	0.372	72	Cycle (sec):					Critical Vol./Cap.	Cap. (X	: (x)	0.571	71
Loss Time (sec): Optimal Cycle:	c): 8 : 48	8 (X+R	a 4 sec)	Average Level C	Average Delay (sec/veh) Level Of Service:	(sec/v. ice:	eh):	10.8 B	en en	Loss Time (sec): Optimal Cycle:	_	8 (Y+R 68	# S	sec) Avera Level	Average Delay (sec/veh) Level Of Service:	(sec/ve ce:	:	18	18.9 C
	******	* * * * * * *	*****	****	****	****	******	*****	****	****	*	*******	***	******		****	****	****	***
Approach: Movement:	L - T -	ound - R	South Bound	ouna - R		East Bound	624	west Bound	ound - R	Approach: Movement:	L T - L	Bound - R	r sour	south Bound	R L L -	East Bound	ี ห : :	west bound	ound - R
Control:	Protected		Protected	ted		Protected	: -	Protected	red	Control:	 Protected	sted	Pro	Protected	 Pro	Protected	-	Protected	ted
Rights:	Ħ		O		:	001	;	Include		Rights:		ıde		ıde		ıde	;	U	
Min. Green: Lanes:	10 20 2 0 2	0	0 0 20	0 70	10 2 0	0	1 0	000	0	Min. Green: Lanes:	1 0 1	1 0	1 0	1 1 0	20 10 0 1 0	20 2 1	20	0 20	0 1
		1					-	1							<u>:</u>	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	<u>:</u> :		1 1 1 1
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	1.0	1.00	1.0	-	-	8.	1.	1.0	1.00	Growth Adj:	1.00 1.00	1.0		1.00 1.00	1.00		÷.	1.0	4
		0				0	37		0	Initial Bse:			0		0				
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PasserByVol:	0 0	0 0	0 0 0	2,0	ם פ		0 12		5 C	Taitial Eut.	0 0	2 4	0 6	0 0	0 6	0 0	٠,	0 0 0	0
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					1.00	1.00 1.	ä	1.0	1.00	PHF Adj:			1.00 1		1.00				
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Reduct Vol:		0 (0 ;		۰ ,		0 (Reduct Vol:	;		٥,	•	0 ;				
Reduced Vol:	469 489	0 6	0 529	9 2 6	139	· ·		0 6	0 6	Reduced Vol:	73 138		463	160 186	139		. 62	81 499	
	1.03 1.05	1.00	1.00 1.05		1.03		-	1 -	1.00	MLF Adi:	1.00 1.05	1.05	1.00.1	1.00 1.00	1.00	1.10 1.	1.00	1.00	000
1.:			0 556		143			I	0	Final Vol.:	73 145				139			81 524	
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::	0.95 1.00				0.95		-			Adjustment:	0.95 0.96				0.95				
	2.00 2.00		0.00 2.00		2.00		0			Lanes:	1.00 1.48	0			1.00				
Sat.:	3610 3800	。_	0 3800	1615	3610	0 16	1615	0	o -	Final Sat.:	1805 2699	9 949	1805 1	1900 1615	1805	4872 7	714 1805	5 3800	1615
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	0.13 0.14	0.00	0.00 0.15	0.26	0.04 0.00		0.20	00 0 00	0.00	Vol/Sat:	0.04 0.05	50.05	0.26 0	0.08 0.12	0.08	0.10 0.10	10 0.04	4 0.14	0.36
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ř	ice Module		•	9	, ,			•		Level Of Serv	Service Module:		, ,	0 00	;				
Delay/vell: 15:4 2:3	1.00 1.00	1.00	1.00 1.00		1.00		-	_	1.00	User DelAdi:	1.00 1.00		1.00.1	n c	1.00	, -	1.02 1.00	7 7 7 00 1 00	, 00
AdjDel/Veh:	15.4 2.3	0.0	0.0 14.0		23.4		1	0.0 0.0	0.0				17.6 1		32.1			1 24.7	
		•		r	•		•	,		•									

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	FI	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	t Vision 200 e/Minimum Ra AM Peak Hour	00 EIS, ail Alt	/EIR ternati	v ve					M	FISCO	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Altern AM Peak Hour	t Vision 200 e/Minimum Ra AM Peak Hour	000 EIS Rail Al ur	FISCO/Port Vision 2000 BIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	ve ve		
***************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	of Servic	Service Computation Report B Method (Future Volume Alt	tation re Volu	keport Jme Alt	ernativ	(9)	:	:	199	1994 HCM OJ	Level Of peration	S S *	. *	Computation Re (Future Volume	Computation Report (Future Volume Alternative)	ernativ ******	****	*
Intersection	Intersection #7 Middle Harbor Rd. / Gate 2		/ Gate 2	* * * * * *	* * * * * * *	* * * * *	* * *	* * * * * * * *	* * *	Intersection #8 Adeline St. / 3rd St.	#8 Adelin	e St./	3rd St.		*****	****************	*****	******	* * * * * * * * * * * * * * * * * * * *
Cycle (sec):	100	0 0 0 0 0	Critical Vol./Cap. (X):	cal Vol	Critical Vol./Cap.	(X):		0.689		Cycle (sec):		4+A)	200	Criti	ical Vo	Critical Vol./Cap. (X):	(X):	0.618	0.618
Optimal Cycle:	. ,	٠ :	Level of	of Ser	Service:				:				*	Level Of	1 Of Se	Level Of Service:		(I) **	H
Approach:		2		щ	East Bound	und - R	West L - 1	West Bound	œ	Approach:	North Bound	puno -	Sout	South Bound	&	East Bound	nnd .	West Bound	sound - R
		-=			. !	- :	1 1				:		1	1	=	- ;	=		
Control:	Protected	Prot	Protected		Protected	ed o	Prot	Protected	•	Control:	Split Phase	hase	Spli	Split Phase	S	Split Phase	ase .	Split Phase	hase
Kights: Min. Green:	10 0	20 0		0	0 20	20	10	20	0	Min. Green:	10 20	20	101		20 1	0	20	10 20	20
Lanes:	10000	1 0 0	0 0	0 =	1 0	1 0	0 1	2 0	-	Lanes:	0 1 0	1 0	0 1	0 1 0	0 0	1 0 1	1 0	0 1 0	1 0
Volume Module	:			- - -		_			-	Volume Module	- 01		_		_		_		
Base Vol:	0	0				33			0	Base Vol:							29		
Growth Adj:	1.00	1.00	1.0	٥.	0.1	1.00	1.00 1.00	00.1.00.	0.0	Growth Adj:	1.00 1.00	1.00	1.00 1	00.1.00.	1.0	0.	00.1	۲.	- i
Added Vol.	33 0	207 0			0 202	n co		271		Added Vol:	7.0				9 0	9 0	, c	90 00	90
PasserByVol:						71		. 0	0	PasserByVol:				0			0		
Initial Fut:		0		0		118			0	Initial Fut:			56				29		
User Adj:		1.00		-		1.00			00	User Adj:		Н,			н :	н .		-	
PHF Adj:	1.00 1.00 1.	1.00 1.00 1. 411 0	1.00 1.00	0.1	0 1.00	11.8	614 609	00.1 00.	20	PHF Adj:	1.00 1.00 8 700	1.00	1.00 1	1.00 1.00 966 26	0.1	00.1.00	00.1	1.00 1.00	1.00
Reduct Vol:	0					0		0	. 0	Reduct Vol:							0		
Reduced Vol:		411 0	0		0 202	118			0	Reduced Vol:	8 700	31	56						99
PCE Adj:						1.00	-		00	PCE Adj:		Н.	1.00.1			-		1.00 1.00	
MLF Adj:	1.00 1.00 1.	1.00 1.00 1.00	1.0	o.	0 1.05	1.05	1.00 1.0	.05 1.00	0.0	MLF Adj: Final Vol .	1.05 1.05	1.05	1.05 1	1.05 1.05	05 1.00	0 1.00	1.00	1.05 1.05	1.05
r tilat vot.:			1	=	- :		- ;	1	> -		- :		,	;				70 66	
Saturation Flow Module:	low Module:	:		:		-			-	Saturation F	Flow Module	- 	-		=		=		-
Sat/Lane:	1900 1900 19	1900 1900 1900 000 000 000 000 000 000 0	900 1900		1900 1900	1900	1900 1900	00 1900	0.6	Sat/Lane:	1900 1900	1900	1900 1	1900 1900	00 1900	0 1900	1900	1900 1900	1900
Lanes:		0.00			0 1.26	0.74			00	Lanes:	0.02 1.89		0.05 1						
Final Sat.:	0			-	0 2258	1314	1805 3800		۰	Final Sat.:			(-)		-		_		
Capacity Analysis Module	lysis Module:	=	;	_		<u>-</u>		,	- : ;	Capacity Analysis Module	lysis Modu.]e:		! !	=	•	=		:
Vol/Sat:	.0 00.0 60.0	0.25 0.00 0.00 ****	00.0	00.0	****	60.0	0.34 U.17	00.00	0.0	Crit Moves.	17.0 17.0	0.21	0.28	.28 0.28	10.01	10.01	0.02	4.4.4	<0.0
Green/Cycle:	0.34 0.00	00.00	0.00 0.00	00.00	0 0.20	0.20	0.46 0.66	00.0 99	00	Green/Cycle:	0.20	0.20	0.28 0	0.28 0.28	28 0.20	-	0.20	0.20 0.20	0.20
Volume/Cap:	0.26 0.00	0.00	0	-	0 0.47	0.47			00	Volume/Cap:	1.02				_		- :		
Level Of Service Module:		<u> </u>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u>: -</u>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		:		-	Level Of Service Module	 rice Module		i ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !		<u> </u>				
Delay/Veh:	15.4 0.0 22				0 23.2	23.2			0.0	Delay/Veh:	54.6 54.6					8 20.8		21.8 21.8	
User DelAdj:	1.00	1.001	-	-	0 1.00	1.00	1.00 1.00	~	00.	User DelAdj:						0 1.00			
Adjuel/ven:	15.4 U.U 22	0.0 5.22	0.0		23.2	3.62				Adjuel/ven:	34.6 34.6	o. #c	4.04	38 48.4	8.07 6	8.07 8	7.17	21.8 21.8	21.8
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, 1 1 1 1 1 1 1 1 1 1 1 1 1	Mini	FISCO/	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	t Vision 2000 le/Minimum Rai AM Peak Hour	0 EIS/E	IR					Σ	FISCC inimum M	/Port V	t Vision 200 e/Minimum Ra AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	IR rnative	4		
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	evel Of gration states Middle	Level Of Service Computation Report Operations Method (Future Volume Alt	Comput:	Computation Report (Future Volume Alternative)	eport e Alter	native	; ;	40	Level Of Service Computation Repor 1994 HCM Operations Method (Future Volume Al	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of Operation: ************************************	f Servins Meth	ce Composite Com	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative)	eport e Alter	native	* * *	* *
Cycle (sec): Loss Time (sec): Optimal Cycle:	**************************************	(Y+R =	Critical Vol./Cap. (X): 8 (Y+R = 4 sec) Average Delay (sec/veh): 8 Level Of Service:	Critica Average Level (Critical Vol./Cap. Average Delay (sec/ Level Of Service:	/Cap. ((sec/v ice:	(X): veh):	×	3313 9.8 B	Cycle (sec): Loss Time (sec): Optimal Cycle:		100 10 (Y+R 70	= 4 sec)	Criti	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	/Cap. ((sec/v ice:	(X): veh):	0.561 17.8 C	0.561 17.8 C
Approach: Movement:	North Bo	* ¤	South Bound East Bound L - T - R L - T - R L	3ound	* 1 Eas	East Bound		West Bound	ound - R	Approach: Movement:	Nort	Sound - R	Sout	South Bound	South Bound East Bound L - T - R L - T - R	East Bound	=	West Bound	sound - R
Control: Rights:	Protected Include		Protected Include	ted	Pro	Protected Include	1	Prot	1	Control: Rights:	1 54	1	Pro	ded ;	<u>-</u>	Protected Include		ı	
Min. Green: Lanes:	10 0 0	7 70	000	° °	。°	20	0 0	10 20 1 0 1	00 4	Min. Green: Lanes:	10 20	0 7 7 0	1 0	0 1	20 10	1 1	02.4	10 20	1 0
Volume Module:	e:	<u> </u>			-				- 0	Volume Module: Base Vol:	le: 0 33	0	16	28	47 48	394	438	0 300	6
Growth Adj:	1.00 1.00		1.00 1.00	1.00	1.00	1.00 1		1.0	1.0	Growth Adj: Initial Bse:	۲.	1.0	1.00 1	1.00 1.00 28 47	1.00	1.00 1	1.00 1	1.00 1.00	1.00
Added Vol:	00	122				501		9		Added Vol:		0 119	00	0 0	00	00	478	136 0	00
PasserByVol: Initial Fut:		122						133 609		Initial Fut:	310				4,			136 300	•
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00 1	1.00 1.00	1.00	User Adj: PHF Adj:	1.00 1.00	1.00	1.00.1	1.00 1.00	1.00	1.00.1	1.00 1	1.00 1.00	1.00
PHF Volume:		122						m c		PHF Volume: Reduct Vol:					48	394	916	136 300 0 0	60
Reduced Vol:		122			0			, m		Reduced Vol:	310 33		16		48			136 300	
PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00 1	1.00 1	1.00 1.00 1.00 1.05	1.00	PCE Adj: MLF Adj:	1.00 1.00	1.00	1.00 1	1.00 1.00	1.00	1.00.1	1.05 1	1.00 1.00	1.0
Final Vol.:	_	=	0		0		_	<u> </u>	:	Final Vol.:	319 33	- 1	16	28	47 48	394	962	136 315	6
Saturation Flow Module:	low Module:	-		:	_	}	_			Saturation Flow Module	low Modul				=		-		
Sat/Lane:	1900 1900	1900	1900 1900	1900	1900 1900		1900 1	1900 1900 0.95 1.00	1900	Sat/Lane: Adjustment:	1900 1900		0.95 0	1900 1900 0.91 0.91	0.95	1.00	0.85 0	1900 1900 0.95 1.00	1.00
Lanes:	1.00 0.00	1.00	0.00 00.0		0.00					Lanes:					1.00			1.00 1.94	
Final Sate:		=====		1 1 1			_					-	- 1	. :	=	1	_		1
Capacity And Vol/Sat:	Capacity Analysis Module: Vol/Sat: 0.00 0.00 0	0.08	0.00 0.00	00.00	0.00 0.14		0.00.0	0.07 0.17	00.00	Capacity Analysis Module Vol/Sat: 0.09 0.09	1ysis Modu. 0.09 0.09	ite: 9 0.09	0.01 0	0.04 0.04	0.03	0.21 0		0.08 0.09	0.00
Crit Moves:		* 6	6		6	* * *	* 0	****	0	Crit Moves:	****	2 0 22	* 0 11 0	0.20 0.20	0.19	9.45 0	0.45 0	****	0.38
Volume/Cap: 0.00 0.00 V00	00.000.00	0.31	00.00.00	0.00	8.0		_ :	31		Volume/Cap:	99.0				0.14		_		
Level Of Ser				;	<u>-</u>	;	_	١.	:	Level Of Service Module	rvice Modul	le:	, , , , ,			10 3		20 E 13 7	7
Delay/Veh: 0.0 0.0 User DelAdi: 1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00		1.00 1	1.00 1.00	1.00	User DelAdj:	1.00 1.00				1.00				
AdjDel/Veh:	0.0 0.0	20.3	0.0 0.0		0.0			20.5 4.0		AdjDel/Veh:	28.9 21.9	9 21.9	25.7 2	21.7 21.7	21.9	12.3 1	14.4 3:	32.5 13.7	13.7
Queue:	0 0	٠ * * * * *	***************************************	*****	***	******	***	******	***	*******	**********	****	***	****	******	****	* * * * * * * * * * * * * * * * * * * *	****	* * * * * * * * * * * * * * * * * * * *

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	FISC	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	on 2000 mum Rai: k Hour	EIS/EIR 1 Alterna	ıtive				Minim	FISCO/Port mum Marine/	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	2000 EI n Rail A	EIS/EIR Alternativ		! ! !	1	1
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative ************************************	Level (Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Computal (Future ******	tion Repc Volume A	ort Nternat	(a)	*	Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #14 Union St./ 5th St./ I-880 North Ramps	el Of S ations ******	Service Computation Report Method (Future Volume Alt ************************************	computation Report Forms (Future Volume I-880 North Ramps	Computation Report (Future Volume Alternative)	ernativ	(a)	! # ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	# # #
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 : 12 (Y+R = 82	Critical Vol./Cap. (X): - 4 sec) Average Delay (sec/veh) Level Of Service:	Critica: Average Level Of	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	p. (x) ec/veh)		0.731 20.8 C	Cycle (sec): Loss Time (sec) Optimal Cycle:	100 11 11 71	(Y+R =	Critic Critic 4 sec) Averag	Critical Vol./Cap Average Delay (se Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): /veh):	# () # # #	0.146 17.2 C	* * *
Approach: Nort		South Bound	ound - R	East B	East Bound	32	Bound - R	Approach: Movement:	Z	ez.	South Bound	2	East Bound L - T - R	und - R	****** West	********* West Bound	* 2 ×
Control: Pr Rights:	red G	Protected Include	ted ude	Split Phase Include	plit Phase Include	rgs 1gs	it Phase Include	Control: Rights:	Protected Include		Protected Include	<u>:</u>	i ii ii	ase de	Split	hase	
٦-		1 0	-		-	0	н	Lanes:			, •	0	1 0	1 0 1	1 0	1 1	0 0
Volume Module:	! ! ! !		-	:	1 1 1 1	:	:	Volume Module:		<u>:</u> :	;	<u>:</u>			-	1	1 1
Growth Adj: 1.00 1.00	1.00 1.00	1.00 1.00	1.00	256 51 1.00 1.00	1.00	1.00 1.00	9 364 0 1.00	Base Vol: Growth Adj:	1.00 1.00 1	45 1.00 1.	0 154	31 24 1.00 1.00	24 43	13	205	31 1	115
••				256 51		0 9		Initial Bse:	0 175		154		,	13	205		115
						0	00	Added Vol: PasserByVol:		0	00	0 0	00	00	125	0 0	o c
ut:		27 .		256 5		569		Initial Fut:	175	•	154			13			115
PHF Adj: 1.00 1.00	1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	0 1.00	User Adj: PHF Adj:	1.00 1.00 1	1.00 1.	.00.1.00.	1.00 1.00	00 1.00	1.00	1.00 1.	.00	1.00
PHF Volume: 125	123 451	72 298	165	256 51	1 207	569	9 182	PHF Volume:	175	252	154			13			115
: 12		72 29	165	us	1 207	569 16	9 182	Reduced Vol:	0 175	252	0 154	31 0	24 43	13	330	31	115
		1.00		1.00 1.00		1.00 1		PCE Adj:	1.00	-	1.00		.00 1.00	1.00	-		1.00
MLF Adj: 1.00 1.00 Final Vol.: 125 123	1.00 1.00	1.00 1.05 72 313	1.05	1.05 1.00 269 51	1 207	1.00 1.05	5 1.05 7 191	MLF Adj: Final Vol.:	1.00 1.10 1	1.10 1. 278	.00 1.05 1 0 162	33 1.05	1.05 1.05 25 45	1.05	330	31 1:	1.00
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			<u></u>										:	=======================================	- 1		-
Saturation Flow Module	dule:	1900	0061	1900 1900	0001	0001	000	Saturation Fl	Flow Module:		0						
t: 0.95			0.95	0.95 0.88		0.95		Adjustment:		0.91 1.	1.00 0.97 0	0.97 0.96	00.1900	0.96	1900 1900 0.95 1.00		1900
Lanes: 1.00 1.00 Final Sat: 1805 1900	1.00 1.00	1.00 1.29	0.71	1.66 0.34	4 1.00	1.00 0.96	5 1.04	Lanes:	1.23 1		1.66				1.00 1.00		1.00
-	. ;	: =	-	•	- 1		- ;			<u>-</u> -		=			0067 6097	:	1
Capacity Analysis Module:	ysis Module:	0.04 0.13	0.13	60.0 60.0	6.10	11 0 25 0	. [Capacity Analysis	Module:	- - - -	0	- 4		-	•		- ;
						:		Crit Moves:	* * * * * * * * * * * * * * * * * * * *	*))) *	70.0	***	70.0	****		
Green/Cycle: 0.10 0.20 Volume/Cap: 0.69 0.32	0.20 0.58	0.10 0.20	0.20	0.20 0.20	0 0.20	0.38 0.38	3 0.38	Green/Cycle:	0.00 0.23 0	0.23 0.	0.00 0.23 0.	0.23 0.20	0 0.20	0.20			0.46
		-	;		:		:			=					*0.0 0*.0	- ;	
Level Of Service Module: Delay/Veh: 35.4 22.1	lodule: 22.1 8.2	28.0 25.6		22.9 22.9	9 24.6	24.0 13.9		Level Of Service Modul Delay/Veh: 0.0 21.2	نه	21.2 0	0.0 20.3 2	20.3 21.2	21.2	21.2	11.7	9.5	10.1
	_		1.00	1.00 1.00		1.00		••	1.00	-	1.00		1.00		-		1.00
Adjuel/ven: 35.4 22.1 Oueue: 4 3	3 7 7	28.0 25.6	25.6 5	22.9 22.9	9 24.6 1 6	24.0 13.9	3 13.9	AdjDel/Veh: Onene:	0.0 21.2 23	21.2	0.0 20.3 2	20.3 21.2	21.2	21.2	11.7 9	.5 10.	10.1
****	*****	*******	•	* * * * * * * * * * * * * * * * * * * *	* * * * * *	****	* * * * * * * * * * * * * * * * * * * *	***	*********	*	* * * * * * * * * * * * * * * * * * * *	*****	* * * * * * * * * * * * * * * * * * * *	*	*	*	*

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1 1 1 1 1 1 1	FISC	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	2000 EIS/ Rail Alt	EIR		! ! ! !	; ; ; ;		_	FISC	O/Port Marine/	FISCO/Port Vision 2000 mum Marine/Minimum Rail AM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	IR rnative			
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.	Level Of Service Computation Report perations Method (Future Volume Alt rt./ I-880 NB Ramps / Frontage Rd.	Computation Report (Future Volume Alternative	Report	inative		1	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	1994 HCM	Level Of Service Operations Method	Of Servions Met	ice Comp hod (Fut *******	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative)	aport Altern	ative)		* *
Cycle (sec): Loss Time (sec): Optimal Cycle:	* ~	Critical Vol./Cap. (X): Average Delay (scc/veh): Level Of Service:	Critical Vol./Cap. Average Delay (sec. Level Of Service:	./Cap. y (sec/	(X): veh):	0.576 21.7 C	9	Cycle (sec): Loss Time (sec): Optimal Cycle:		100 5 (Y+R 35	11 02	Crit sec) Aver Leve	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	Cap. (X) (sec/veh [ce:	h):	0.403 1.4 A	***
Approach: Movement:	North Bound L - T - R	South Bound East Bound L - T - R L - T - R	۵ ۲	East Bound	nd R	West Bound	Bound F - R	Approach: Movement:	North L	North Bound	nos T	South Bound	R L -	East Bound	א	West Bound	ind R
Control:	Protected	Protected	<u>:</u> -	Protected Toolude	<u>-</u> 	Protected Include	 ed de	Control:	Prot	Protected Include	 Pr	Protected Include	Pro	Protected Include	<u>:</u> -	Protected Include	- Gd
Kignes: Min. Green: Lanes:	10 20 20 2 0 0 1 0	10	20 10		20	0 20	20	Min. Green: Lanes:	0	0000	。。	00	0000	20	20 1	10 20 0 2 0	50
Volume Module		-			-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	; ; ;	Volume Module	!		<u>:</u>	• • • • • • • • • • • • •	<u>:</u>		<u>-</u>	!	•
Base Vol:	0 548	17 0	94 0	91 0	0 0	0 62	۳ ون ر د	Base Vol: Growth Adi:	1.00 1.0	0 0	1.00	1.00 1.	0 0.00.	۰ 8	0 65 1.00 1.00	65 0 00 1.00	1.00
Growth Adj: Initial Bse:	0 548 2	17 0				200		Initial Bse:	i				0 0	0 245		65 0	00
Added Vol: PasserBvVol:	0 0 0	00	379 332 0 0	0		0 0		Added Vol: PasserByVol:	0		0	00					0
Initial Fut:	679 548	17 0		53		0	r ;	Initial Fut:		,	0 6	0 8	0 6		•	65 1077	0 6
User Adj: PHF Adi:	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00	1.00.1	1.00 1.00	1.00	User Adj: PHF Adj:	1.00 1.	.00 1.00	1.00	1.00 1.0	1.00			1.00'1.00	1.00
PHF Volume:	548	17 0		N	0 0	0 81	r1 0	PHF Volume:	0 0	00	00	0 0	0 0	345 5	589	65 1077	0 0
Reduct Vol: Reduced Vol:	0 0 0 679 548 21	17 0	0 0 473 332	29	o o	₩.	, 4	Reduced Vol:			0	0	0				0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	PCE Adj: MLP Adj:	1.00 1.00	00.1.00	1.00	1.00 1.	1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10	1.00 1.	1.00 1.00	3 1.05	1.00
MLF Adj: Final Vol.:	699 548 21	17 0		30		0 85	; ⁻	Final Vol.:			ٔ :		0		_		0
Saturation Flow Module:	low Module:				=		-	Saturation F	Flow Module	le:	-	! ! ! ! !	-		=		-
Sat/Lane:		1900 1900		1900	1900	1900 1900	1900	Sat/Lane:	1900 1900	1900	1900	1900 19	1 0001 0001	1900 1900	1900 1900	0 1900	1900
Adjustment: Lanes:	2.00 0.96 0.04	1.00 0.00	2.00 1.00	2.00			0.02	Lanes:	0.00 0.00		0.00		0.00			0 2.00	00.0
Sat.	3610 1812	1805 0	3230 1805	3800	0	0 3756	44	Final Sat.:	0	0 0	• :	0	0 03	3800 16	1615 3610 	0 3800	0
Capacity Anal	Capacity Analysis Module:	0.01 0.00	0.17 0.18	0.01	_	0.00 0.02	0.02	Capacity Analysis Vol/Sat: 0.00		Module: 0.00 0.00	00.00	0.00.0	0 00 0 00 0	0.10 0.36	36 0.02	2 0.30	. 00.0
Green/Cycle:	0.27 0.37	0.10 0.00		0.43		00.	0.20	Green/Cycle:	0.00 0.00		0.00		0.00				0.00
Volume/Cap:	0.71 0.81 0.81	0.09 0.00	0.39 0.81	0.02	0.00	0.00 0.11	0.11	Volume/Cap:	0.00 0.00	00.00	00.00	0.00	0.00 0.00	0.11 0.43	43 0.19	9 0.31	00.0
Level Of Ser	rice Module:		=					Level Of Service Module:	vice Mod	dule:		6		α.	יי די אני די די		c
Delay/Veh: 22.8 23.2	22.8 23.2 23.2	1 00 1 00	12.8 31.7	1.00	1.00	1.00 1.00	1.00	User DelAdi:	-	-	-		1.00	-		1.00	1.00
AdjDel/Veh:		26.4 0.0		10.7	0.0	0.0 21.2	21.2	AdjDel/Veh:	0.0					0.8 1		7 0.1	0.0
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B-AM.CMD	2	Tue Nov 5, 1996 13:06:46	06:46	Page 18-1	B-AM.CMD	Ð	Tue Nov 5, 1996	13:06:46		Page	19-1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FISCC Minimum M	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	EIS/EIR			FISC	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour	000 EIS/EIR Rail Alternati	e ^		
19: ************************************	Level Of 1. Level	Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative) Intersection #17 14th St./ I-880 Frontage Rd.	ttion Report e Volume Alternat	ive)	**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #18 W.Grand Ave./ I-880 Frontage Rd.	Level Of Service Computati Operations Method (Future V ************************************	Service Computation Report Method (Future Volume Alternative)	ernativ	* *	*
**************************************	(sec/veh):	**************************************	Worst Case Level Of Ser		Cycle (sec):	100	Crit:	Critical Vol./Cap. (X):	(X):	t T	0.498
Approach:	North Bound	South Bound	East Bound		Optimal Cycle			l Of Service:	. (313)		0
Movement:	L - T - R	L - 7 - R	L - T - R		Approach:	North Bound	South Bound	* * *	nnd	West	West Bound
- 	Uncontrolled		ŝ	Stop Sign	Movement:	T - T - R	- L	R - 1	м -	i H	۲. ۲۵.
Rights: Lanes:	Include 0 0 1 1 0	Include 1 0 2 0 0	Include 0 0 0 0 0	Include 1 0 0 0 1	Control:	Split Phase	Split Phase			Prote	Protected
	-				Rights:	Include	ıde	Include		ŭ,	Include
Volume Module:			c	9 0 041	Min. Green: Lanes:	20	0 0	7 7	1 0		-
	1.00 1.	1.00 1.00 1.0	1.00 1.00 1.0	1.00 1.00 1.0			1 1 1 1 1 1 1				!
••		30 0	0	0	Volume Module			,			
Added Vol:	332	379		00	Base Vol:		1 00 1 00 1	00 1 00 1 00	7 0	7 00 1 00 1	152 443
PasserByVol:	0 0 0	0 0 0 0		o c	Initial Bse:		678 48	65		0 1	
	1.00 1.	1.00 1.00 1.0	1.00 1.00 1.0	1.00 1.00 1.0	Added Vol:	212 12	(4	0	0		
		1.00 1.00	1.00 1.00	1.00 1.00 1.0	PasserByVol:	0	0	0	0		
		30 379	0	0	Initial Fut:	212	678 287	65			
Reduct Vol:		0	0 0	0 0	User Adj:	1.00 1.00 1.00	1.00 1.00 1	.00 1.00 1.00	00.1	1.00 1.00	1.00
Final Vol.: 0 332	0 332 89	30 3/3 0	>	0	PHF Volume:	212	678 287	65		140 28	
Grade:	*0	*0	*0	*0	Reduct Vol:	0		0 0 0	0	0	0 0
* Cycle/Cars:	XXXX XXXX	XXXX XXXX	XXXX XXXXX	XXXX XXXX	Reduced Vol:		678 287	65		140 2	
* Truck/Comb:		XXXX XXXX	XXXX XXXX	xxxx xxxx	PCE Adj:	1.00	1.00 1.00	0 1.00			
PCE Adj:	_:	1.10 1.00 1.00	1.10 1.10 1.10	=	MLF Adj:	1.05	1.05 1	1.001		-	~
Cycl/Car PCE:	XXXX				Final Vol.:	9 222 126	712 287	6 65 371	13	140 3	317 494
Trck/Cmb PCE:	XXXX XXXX	33 379 O	XXXX XXXX	154 0 7	Saturation Flow Module:	ow Module:					-
Adj vol.: Critical Gan Module:	*	1	•		Sat/Lane:	1900 1900 1900	1900 1900 1900	0061 0061 00	1900	1900 1900	00 1000
MoveUp Time:x	MoveUp Time:xxxx xxxx xxxx		2.1 XXXX XXXXX XXXXX XXXXX	3.4 xxxx	Adjustment:	0.95 0.95 0.95	0.95 1.00	1.00 0.95 1.00		0.95 0.91	
Critical Gp:x	Critical Gp:xxxx xxxx xxxxx		5.5 XXXX XXXXX XXXXX XXXXX	7.0 xxxx 5.5	Lanes:	1.28	2.00 0.98	1.00			
1 1 1 1 1 1 1 1					Final Sat.:	1805 2303 1307	3610 1861	39 1805 3671	129	1805 2027	27 3160
Capacity Module:	le:					1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Chilict Vol:	XXXX		XXXX XXXX XXXX	785 XXXX 210	volvest; maiysis	Thomas of the	0 00	0,000		31 0 80 0	31 0 31
Potent Cap.: xxxx	XXXX XXXX XXXX	1 00 **** ****	****	XXXX 65	Crit Moves:	***	***	* *			•
	***** **** ****		XXXX	22 xxxx	Green/Cycle:	0.20 0.20 0.20	0.33 0.33 0.3	33 0.10 0.24	0.24	0.12 0.26	26 0.26
			_		Volume/Cap:	0.48 0	0.60 0.47	7 0.36			
Level Of Service Module:	ice Module:				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
Stopped Del:x	Stopped Del:xxxxx xxxx xxxxx		xxx xxxx x	19.7 xxxx 3	Level Of Service Module						
LOS by Move:	•	* *	*	* !	Delay/Ven:	23.3	18.5 17.3	27.7			
Movement:	LT - LTR - RT			LT - LTR	User DelAdj:	1.00 1	1.00 1.00		00.00	31 5 31 5	00.1.00
Shared Cap.:	Shared Cap.: xxxx xxxx xxxxx	XXXX XXXX XXXX	XXXX XXXX XXXX	XXX	Adjuet/ven:	20.8 23.3 23.3	12.5 17.3	.3 2/./ 20.9			
Shrd StpDel:x	XXXX XXXX XXXX	Shrd StpDel:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx	XXXXX XXXXX	xxxx xxxx xxxx	Onene:		0 /T	7 7 0	•	* *	77 0
Shared LOS:	*	• ີ		-		: : : : : : :	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
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Tue Nov 5, 1996 12:31:19

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D-5M-5M				1	· · · · · · · · · · · · · · · · · · ·	;	B-PM.CMD Tue Nov 5, 1	1996 12:31:19			Page 1-2	ņ
	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	on 2000 EIS/EIR num Rail Alterna c Hour	ative				Mini	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Alternat	tive	!		
	Trip Generation Report	ion Report	1			:	PM Pea	PM Peak Hour			1	
	Forecast for PM Peak Hour	PM Peak Hour					Zone # Subzone Amount Units	Rate Rate In Out	Trips T In O	Trips Out	Total † Trips T	% Of Total
Zone # Subzone	Amount Units	Rate Rate In Out	Trips Trips In Out	Trips	Total Trips	% Of Total	Zone 23 Subtotal		161	193	354	7.6
1 New Harbor Zone 1	391.00 Employees Subtotal	0.06 0.22	23	98	109	2.3	SP Rail Term 1.00 Truck Zone 24 Subtotal	144.00 1	144	172	316 316	6.8 6.8
2 Hrbr Trns Ct Zone 2 3	t 400.00 Employees Subtotal	0.06 0.21	24	84	108	2.3	25 UP Rail Term 1.00 Truck External Zone 25 Subtotal	1 48.00 58.00	48 48	58 8	106	2.3
3 J.I.T. Zone 3	167.00 Subtotal	0.10 0.36	17 .	09	7.7	1.7	26 Middle Harbr 1.00 Truck External Zone 26 Subtotal	1 244.00 293.00	244	293 293	537	11.5
4 SP Rail Term Zone 4 S	il Term 150.00 Employees Zone 4 Subtotal	0.10 0.36	15	5. 4. 4.	69	1.5	27 7th St Harbr 1.00 Truck External 290.00 348.00 Zone 27 Subtotal	1 290.00 348.00	290	348	638	13.7
S UP Rail Term Zone S S	m 67.00 Employees Subtotal	0.10 0.36		24	31	0.7	Outer naibor Zone 28 Sub	00.64# 00.676 1	375	449	82 4	17.7
6 Middle Harbr Zone 6 8	r 516.00 Employees Subtotal	0.06 0.22		114	145 145	3.1	TOTAL		1888	2762	4650 100.0	0.00
7 7th St Harbr Zone 7 S	r 613.00 Employees Subtotal	0.06 0.22	37	135	172	3.7						
8 Outer Harbor Zone 8	r 792.00 Employees Subtotal	0.06 0.21	4 4 8 8	166 166	214	4. 4. 6. 6.						
10 New Park Zone 10	1.00 Total Trips 0 Subtotal	16.00 38.00	16	38	54	1.2						
11 New Harbor Zone 11	1.00 Trucks Inter 1 Subtotal	38.00 45.00	38	4 5 6 5	83 83	1.8						
16 Middle Harbr Zone 16	r 1.00 Trucks Inter 6 Subtotal	50.00 59.00	500	6 G	109	2.3						
17 7th St Harbr Zone 17	r 1.00 Trucks Inter 7 Subtotal	59.00 71.00	65. 67.	17	130	2.8						
18 Outer Harbor Zone 18	r 1.00 Trucks Inter 8 Subtotal	76.00 91.00	76	91	167	3.6						
21 New Harbor Zone 2	arbor 1.00 Truck External Zone 21 Subtotal	185.00 222.00	185	222	407	8. 8 8. 8						
23 J.I.T.	1.00 Truck External 161.00 193.00	161.00 193.00	161	193	354	7.6						
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3-1		1	Total	Left Thru Right Volume		754	916	1670		1001	1253	2314		408	1548	1956			68	24.36	2504		852	998	447	2165		479	1462	1941	•	1217	1218		c	649	649		1369	916	2315
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	. e	:	Z.	Left		0	0	0		92	0	92		0	0	0		•	0 (0 4	40		94	136	159	389		89	0 8	n o	c	, Ř	95		c	37	37		0	98	95
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B-1			[0]	Type	##	Base	Add	Total	#	Base	Added	Total	#	Base	Added	Total	7	o f	Added	1000	2	#1	Base	Added	Pas	Total	#	Base	Added	,	#9 7	Added	Total	#	Base	Added	Total	# 2	Base	Added	Total
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12:31:1	oo EIS ail Al r	d. a.	Trips Existing	4	:			11.0																																	
1996 12	t Vision 2000 e/Minimum Rail PM Peak Hour	ut i on	rips		} ;		23		23										. 6	. 0	. 6	9.6	9.6																		
5,	t Visi e/Mini PM Pea	strib		Gates	: :		17.0	30.0	17.0	17.0	17.0	17.0	0.0	0.0	0.0	0.0	9 6		20.0	200	20.0	20.0	20.0																		
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[+ ·	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	۲	۵.	ď			0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.7	13.7	13.7	13.7		0.0	0		0.0	0.0																		
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			Mini	FISCO	/Port arine/ PM	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	1 2000 Im Rai Hour	EIS/E	IR	ā			1 1 1		 	1 1 † ! !	Minim	ISCO/1	ort V ine/M	t Vision 200 e/Minimum Ra PM Peak Hour	2000 E Rail	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	ative	1 ! !	 - - 	! ! ! !	:
Volume	No Left	Northbound Left Thru Right	ì	So	Southbound t Thru Rigl	Southbound Eastbound Left Thru Right Left Thru Right	Ea. Left	Eastbound t Thru Ri	i	West Left T	Westbound Total Left Thru Right Volume	d ight V	Total	Volume	No	Northbound Left Thru Right	:	Sout eft Th	Southbound Left Thru Right	1	East eft Th	Eastbound Left Thru Right	;	West ft Th	Westbound Total	To To	Total
#13 Adeline Base 0 Added 186		St./ 5th St./ I-880 SB 0 0 241 0 172 533 0 102	th St. 0 533	./ I-81 241 0	80 SB 0 102	Ramp 69 0	138	157	105	363	202	616	, 1423 1462	#159 Base Added	-259 309	0 0	0 0	0 0	00	. ••	0 0	0 0	0 0	0 -105 0 114	105		-364
Total	186	172	533	241	102	69	138	157	105	363	202	919	2885	Total	20	0	0	0	0	0	0	0	0		6		59
#14 Union St./ 5th Base 0 194	on St	./ 5th 194	St./ 281		North	I-880 North Ramps 0 144 30	m	97	18	32	31	34	892	#160 Base	0	0	0	0	0	0	0	0		-105 -259	69		-364
Added Total	00	0 194	105 386	00	144	90	31	97	18	186 218	31	34	291 1183	Added Total	00	00	00	00	00	0 0	00	00	0 0	114 3	309 50	00	423 59
.#15 7th	St	I-880	I-880 NB Ramps'/	/.sdw		Frontage Rd			ď	•	(9	#161	•	ď	•		ı.		,		•	•	•		!
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#16 7th Base	st./	H	SB	sđu:	0	0	0	0	7	378	0	0	385	#165 Base	0	0	0		-126	0	0	0 -534	34	0	0		-660
Added	00	00	00	0	0 0	00	0	396	645	0 0	742	0	1783	Added	00	0	00	0 0	105				645				750
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#17 14th Base		St./ I-880 Frontage 0 62 130 4	0 Fron	itage F	Rđ.	0	0	0	0	115	0	7	318	#170 Base		-205	-391	0	0	0	0	0	0	0	-	•	596
Added	0	378	0	0	566	0	0	0	0	0	0	0	644	Added	0		466	0	0	0	0	0	0	0	0	0	652
Total	0	440	130	4	266	0	0	0	0	115	0	7	962	Total	0	-19	75	0	0	0	0	0	0	0	0	0	26
#18 W.Grand		_	0	Front	Frontage Rd.		;	į		•	,	,		#177	,	,			;	,		;		,			
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#138	c	-168	o		-123	-24	-20	0	c	c	6	¢	-335	#182 Base		-439	c	c		-247	c	c	c	c	c		736
Added		82	0	0	22	36	31	0	0	0	. 0	0	204	Added	0	481	0	0	0	327	0	. 0	. 0	. 0	. 0	. 0	808
Total	0	-86	0	0	-68	12	11	0	0	0	0	0	-131	Total		42	0	0		30	0		0	0	0	0	72
#158 Base		-259	-163	0	0	0	0	0	0	0	0	0	-422	#201 Base	0	0	0	0	0	0	0 -1043	943	0	0	0	0	-104
Added	0		179	0	0	0	0	0 (0	0	0	0	488	Added	0	0	0	0	0	0	0 1178	8/	0	0	0		1178
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#204 Base	Minimum Marine/Minimum Rail Alternative FISCO/Port Vision 2000 EIS/EIR Southbound Eastbound Left Thru Right Left Thru Right Lu 415 763 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	mum Rail Altern k Hour Eastbound Left Thru Ri 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2000 EIS/EIR m Rail Alternativ Hour Eastbound Left Thru Right 0	Ve Westb 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Westbound Total Left Thru Right Volume 0 0 0 1178 0 0 0 1178 0 0 0 308 829 0 0 308 829 0 0 308 829 13 75 0 741	Total Total Volume 1178 1178 135 141	#244 Base 0 0 0 0 -302 Added 0 0 0 0 -226 Total 0 0 0 0 0 -76	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour Southbound Eastbound ht Left Thru Right Left Thru Right L 0 0 0 -302 -226 -44 0 0 0 0 226 159 108 0 0 0 0 -76 -67 64 0	Westbound Total Left Thru Right Volume 0 -37 0 -609 0 91 0 584 0 54 0 -25	Total Total Jht Volume 0 -609 0 -584 0 -258
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			F. Minim	ISCO/E	Port V	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Altern PM Peak Hour	2000 Rail	EIS/E1 Alter	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour								Minim	ISCO/F um Mar	ort V ine/M	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Altern PM Peak Hour	000 El Rail /	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	tive				
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B-PM.CMD

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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	: : :	. Σ	FIS	CO/Por Marin	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	on 200 mum Ra: k Hour	o EIS/	EIR ernativ	97	1 4 1 1 1	7 1 1 1 1	; ; ;	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	000 EIS/EII Rail Alteri	R native	1 1 4 1 1 1 1 1 1 1 1
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Total	•	D		0	-143		77-	57-	4.	4	811	16-	# 4 Maritime St./ 14th St. C 15.9	15.9 0.392	C 22.3 0.831	4 6.369 D/V
													# 5 Maritime St./ 7th St. Extensio B 5.8	5.8 0.080	B 12.0 0.375	+ 6.247 D/V
													# 6 7th St./ 7th St. Extension B 5.8	0.018	C 20.1 0.585	+14.262 D/V
													# 7 Middle Harbor Rd. / Gate 2 B 13.5	13.5 0.296	C 20.6 0.803	+ 7.150 D/V
													# 8 Adeline St./ 3rd St. C 20.4	20.4 0.084 1	E 46.7 0.618	+26.342 D/V
													# 9 7th/New Middle Harbor C 15.8	15.8 0.000 1	В 9.7 0.321	-6.172 D/V
													# 12 Maritime St./ W.Grand Ave./ I- B 12.4	12.4 0.237 (C 19.0 0.440	+ 6.603 D/V
				•									# 13 Adeline St./ 5th St./ I-880 SB C 17.6	17.6 0.328 (C 21.0 0.577	+ 3.404 D/V
													# 14 Union St./ 5th St./ I-880 Nort B 12.5	12.5 0.178 (C 16.2 0.205	+ 3.749 D/V
													# 15 7th St./ I-880 NB Ramps / Fron B 11.5	11.5 0.135 (C 18.1 0.400	+ 6.671 D/V
													# 16 7th St./ I-880 SB Ramps A 2.6	2.6 0.113 I	В 5.7 0.538	+ 3.109 D/V

A 1.9 0.000 C 2.2 0.000 + 0.000 V/C

17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505 C 21.9 0.652 + 0.828 D/V

B-PM.CMD Tue Nov 5, 1996 12:31:20 Page 6-1	B-PM.CMD Tue Nov 5, 1996 12:31:20 Page 7-1
FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #3 Maritime St./ Burma St.	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #4 Maritime St. / 14th St:
	Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:
North Bound South Bound East Bound Wes	North Bound L - T - R
Protected Protected Protected Prote Include Include	Protected Protected Include
c	Min. Green: 10 20 20 10 20 20 10 20 20 20 20 20 20 20 20 20 20 20 20 20
dule:	dule:
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109 0 0 230 122 201	Initial Bse: 0 414 28 105 132 0 0 0 0 92 0 290 Added Vol: 285 232 0 0 139 92 130 0 374 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1	PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1
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1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 Reduct Vol: 5 952 0 0 339 122 201 0 50 0 0 0	Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduced Vol: 285 646 28 105 271 92 130 0 374 92 0 290
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
1.: 5 1000 0 0 356 128 201 0 50 0 0	1.: 285 678 29 105 284 96 130 0 374 92 0
Flow Module: 1900 1900 1900 1900 1900 1900 1900 1900	dule: 1900 1900 1900 1900
Adjustment: 0.95 1.00 1.00 1.00 0.96 0.95 1.00 0.85 1.00 1.00 1.00 Lanes: 1.00 2.00 0.00 1.00 1.47 0.53 1.00 0.00 1.00 0.00 0.00	Adjustment: 0.95 0.99 0.99 0.95 0.96 0.96 0.53 1.00 0.53 0.37 1.00 0.85 Lanes: 1.00 1.92 0.08 1.00 1.49 0.51 0.26 0.00 0.74 1.00 0.00 1.00
Final Sat.: 1805 3800 0 1900 2683 965 1805 0 1615 0 0 0	3608 154 1805 2726 922 259 0 744 703 0
nal	Capacity Analysis Module: Vol/Sat: 0.16 0.19 0.19 0.06 0.10 0.10 0.50 0.00 0.50 0.13 0.00 0.18
: 0.24 0.62 0.00 0.00 0.48 0.48 0.20 0.00 0.00 0.00 0.00	**** **** **** **** **** **** **** **** ****
VOLUME/CAP: 0.01 0.42 0.00 0.28 0.28 0.28 0.00 0.10 0.00 0.00 0.00 0.00 0.00 0.0	Volume/cap: 0.92 0.76 0.76 0.47 0.52 0.92 0.00 0.70 0.24 0.00 0.33
e: 0.0 0.0 10.1 10.1 24.7 0.0 21.4 0.0 0.0 0	vice Module: 48.1 25.0 25.0 27.5 23.6 23.6 27.9 0.0 7.2 7.7 0.0
/Veh: 18.7 6.4 0.0 0.0 10.1 10.1 24.	User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
Queue: 0 14 0 0 6 2 5 0 1 0 0 0 0 0	Queue: 10 18 1 3 7 3 5 0 6 1 0 4

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B-PM.CMD		Tue	Tue Nov 5,		1996 12:31:20	o;		Pa	Page 8-1		B-PM.CMD		F	Tue Nov	5, 1996	12:31:20	20		Pac	Page 9-1	
1 1 1 1 1 1 1 1 1	Minim	FISCO/I	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	t Vision 200 le/Minimum Ra PM Peak Hour	oo EIS	S/EIR ternat:	ive			•		Σ	FISCCinimum P)/Port Marine/	FISCO/Port Vision 2000 mum Marine/Minimum Rail PM Peak Hour	2000 EI	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	. o		1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	ration:	Level Of Service Computation Report perations Method (Future Volume Alt	e Compu d (Futu ****** Extens	uration ure Vol	Computation Report (Future Volume Alternative	ternati	<u> </u>		: :	Level Of Service Computation Report 1994 HCM Operations Method (Puture Volume Alternative) ************************************	Le 1994 HCM Ope ************************************	Level Of Service Operations Method St./ 7th St. Extens	Of Service lons Method	rvice Com Method (Fu ************************************	putation ture Vo	Computation Report (Future Volume Alternative)	ernativ		# # # # # # # # # # # # # # # # # # #	* ;
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 100 8 (.	(Y+R =	4 sec)	Criti Avera Level	Critical Vol./Cap Average Delay (se Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(x): c/veh):		0.375 12.0 B		Cycle (sec): 100 Loss Time (sec): 8 (Y+R Optimal Cycle: 68	ac):	100 8 (Y+R 68	η Ω	Criticsec) Average Level	Critical Vo Average De Level Of So	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	(X): /veh):		0.585 20.1 C	
Approach: Movement:	Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R	nd R	South L - T	South Bound	.i	East Bound	ound - R	i i	West Bound	e e	Approach: Movement:	North Bound L - T -		Sou	South Bound	ם צ	East Bound	und R	West	West Bound	~
Control:	Protected	<u> </u>	Protecte	; -	<u> </u>	Protected Ovl	 ted	;	Protected Include	-	Control:		otected Include	 Pr	Protected Include		Protected Include	 ed de	Prote	Protected Ov1	-
Min. Green: Lanes:	10 20 2 0 2 0	۰,	00	۰	20 1 1 2	10 0	0 10	00		۰,	Min. Green: Lanes:	10 20	0 20	10	20	20	10 20 0 2	1 0	0 0	20 0	20
Volume Module:		<u>=</u> 			<u>-</u>		1			<u> </u>	Volume Module	:		-	1 1 1			= :	1		-
Base Vol: Growth Adj:	36 0 1.00 1.00 1	1.00	0 0	÷.	75 223 00 1.00	3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00	1.00 1.	00 1.	。。	Base Vol: Growth Adj:	1.00 1.00	0 1.00	31	18 1.00 1	1.00 1.00	00 1.00	19	0 0 1.00 1.00		1.00
Initial Bse:								00	00	00	Initial Bse:	0 0		31	18	0 112 17	0 0	19	0 40	338 36	0 365
PasserByVol:							0	0	0	. 0	PasserByVol:			0				0			0
Initial Fut: User Adi:	272 445 1.00 1.00 1	.00	0 449 1.00 1.00	449 139 .00 1.00	19 296 00 1.00	36 0 30 1.00	356	1.00 1.	.00	° 8.	Initial Fut: User Adj:	47 142 1.00 1.00	2 53	1.00	139		173 489	1.00	40 338 1.00 1.00		365
PHF Adj:	1.00					00 1.00		1.00 1.	.00	00.	PHF Adj:	1.00 1.00				-	00 1.00	1.00	1.00'1.00		00.
Reduct Vol:		• •			ì					. 0	Reduct Vol:			0				0			0
Reduced Vol: PCE Adi:	272 445 1.00 1.00 1	1.00	0 449 1.00 1.00	449 139	19 296 00 1.00	0 1.00	356	1.00 1.00	00 1.00	000	Reduced Vol: PCE Adj:	1.00 1.00	2 53 0 1.00	529	1.00 1	112 17	173 489 1.00 1.00	1.00	40 338 1.00 1.00	-	365
MLF Adj:			1.00 1.05			3 1.00			-	00.	MLF Adj: Final Vol.:	1.00 1.05		1.00			.00 1.10	1.10	1.00 1.05		365
		; =	- ;	1	\doteq	- :	<u></u>		-	· -			;	-	- :	$\stackrel{\cdot}{=}$	- :	=======================================	- ;	i	-
Saturation Flow Module: Sat/Lane: 1900 1900		1900	1900 1900	00 1900		1900 1900	1900	1900 1900	00 1900	000	Saturation Fl Sat/Lane: Adiustment:	Flow Module: 1900 1900 0.95 0.96	a: 0 1900 6 0.96	1900	1900 1	1900 1900 0.93 0.95	00 1900 95 0.98	1900	1900 1900	00 1900	00
Lanes: Final Sat.:	3800		0.00 2.00								Lanes: Final Sat.:	1.00 1.45 1805 2651									000
Capacity Analysis Module	lysis Module: 0.08 0.12 0	0.00	0.00 0.12	12 0.09	90.08	00.08	0.22	0.00 0.00	00 0 00	00	Capacity Anal	ysis Modul	ule: 6 0.06	0.29	0.07 0	0.07 0.10	10 0.11	0.11	0.02 0.09	. °	.23
Crit Moves: Green/Cycle: Volume/Cap:	0.22 0.58	_	0.00 0.35	35 0.70 35 0.12	0 0.34	14 0.00 25 0.00		0.00 0.00	00.000	000	Green/Cycle: Volume/Cap:	0.20 0.20 0.10 0.13 0.28	0 0.20		0.39 0	0.39 0.13 0.19 0.75	13 0.20	0.20	0.13 0.20	20 0.59	38
Level Of Service Module Delay/Veh: 21.3 6.6 User DelAdj: 1.00 1.00	,	0.0	0.0 15.4	.4 3.2		; –	8.0	0.0 0	0.0 0.0	0.0	Level Of Service Module: Delay/Veh: 21.4 22.0 User DelAdj: 1.00 1.00	rice Module 21.4 22.0 1.00 1.00	le: 0 22.0 0 1.00	20.0	12.8 1	=	6 23.7	=	25.1 23.1	: 7	6
AdjDel/Veh: Queue:	21.3 6.6	0.0	0.0 15.4	10 1	.2 15.2 1 6	0.0	8.0	0.0	0.0	0.0	AdjDel/Veh: Queue:	21.4 22.0	22.0	20.0	12.8 1; 3	12.8 35.6 2 5	6 23.7 5 14	23.7	25.1 23.1 1 9	.1 7.1 9 5	1. 8
	***************************************	* * * * *		* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	***	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * *	* * *	*****	***	***	* * * * * *		* * * * * * * * * * * * * * * * * * *	***	* * * * * * * * * * * * * * * * * * *	* * * * * * * *	* * * * * * *	* *

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	Minin	FISCO/	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	on 200(num Raj	D EIS/E	IR	, di						Minim	ISCO/F	SCO/Port Vision m Marine/Minimum PM Peak H	t Vision 200 e/Minimum Ra PM Peak Hour	2000 EIS/ Rail Alt	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	: : : : :	1 1 1 1 1	1 1 1 1	; ; •
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #7 Middle Harbor Rd. / Gate 2	Level Of Service 1994 HCM Operations Method ************************************	vel Of ration:	Level Of Service Computation Report perations Method (Future Volume Alt """"""""""""""""""""""""""""""""""""	Computa (Future	Computation Report (Future Volume Alternative)	eport e Altei	rnativ	* *			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #8 Adeline St./ 3rd St.	1994 HCM ******* #8 Adel	Level DM Operat:	Level Of Service Operations Method ************************************	Servic Metho	d (Fut)	uration ure Vol	Service Computation Report Method (Future Volume Alternative)	ernati			! # 4 ! # 4
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 Critical Vol./Cap. (X) 3c); 0 (Y+R = 4 sec) Average Delay (sec/veh	(Y+R =	Critical Vol./ 4 sec) Average Delay Level Of Servi	Critica Average Level C	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	/Cap. (X): (sec/veh): ice:	(X): 7eh):	0.	0.803 20.6 C	: ;	Cycle (sec): Loss Time (sec) Optimal Cycle:	ec):	100 12 (Y 92	(Y+R =	4 sec)	Critical 4 sec) Average Level Of	Critical Vol./Cap Average Delay (se Level Of Service:	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	(Cap. (X): (sec/veh): ce:		0.618 46.7	
Approach: Movement:		nd R	South Bound	ound - R	ī Ē	East Bound	nd R	West 1	West Bound	:	Approach: Movement:	Nort	North Bound	ש	South L -	South Bound	۲. ت	East Bound	und - R	Wes	West Bound	ص ح
Control:	Protected		Protected	ted	 Pr	Protected Include		Protected	otected Include	1	Control:	 Sp1	Split Phase	<u>.</u>	Split	Split Phase	! -	Split Phase	ase de	Split	Split Phase	<u> </u>
Min. Green: Lanes:	10 0 0	7 7 7	0 0 0	٥	00	20	0 70	10 2	20 0 2	· .	Min. Green: Lanes:	01 0	20	0 0	10		20 1	1 0	20	10 1	20	0 50
Volume Module	¦			1	<u>:</u>		<u>-</u>	:		-	Volume Module	¦	;	<u>-</u>	1			1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	i ! !	1	
Base Vol: Growth Adj:	1.00		1.0	1.00	1.00			1.	88 00 1.00	0 0	Base Vol: Growth Adj:	36	0 8			-i	i.	0 1.00	13	1.00 1	39	78 1.00
Initial Bse: Added Vol:	95 0 9	229 304	00	00	00	215 205	131 2	94 88 136 214	88 14	00	Initial Bse: Added Vol:	36	0 891	122	0 5	. 0	15 30 0 0	0 14	13	68 0	39	78
PasserByVol:	0 94	106	00	00	00	0 0	106	159 0	و ه	0 0	PasserByVol:	0 4	0 6	0 ;	0 ;	0 0	0 0	0 5	0 .	0 0	٥	0 6
User Adj:	1.00		1.00 1.00					8			User Adj:	1.001							1.00	1.00.1		1.00
PHF Adj: PHF Volume:	1.00 1.00 1	1.00	0 1.00	1.00	1.00 1.00			389 302	1.00	၁ ဝ	PHF Adj: PHF Volume:	1.00.1	1.00 1 891	1.00 1	1.00 l. 43 5	1.00 1.00 570 15	00 1.00 15 30	0 1.00	1.00	1.00.1	39	1.00 78
Reduct Vol:	0 0	0 63	00	00	00	420	0 239	389 302	0 0	0 0	Reduct Vol:	0 4	0 168	0 221	0 4	0 275	0 0	0 0	٥٢	0 8	0 6	10
}			1.00 1.00					00.		. 6	PCE Adj:	1.001							1.00	-		1.00
MLF Adj: Final Vol.:	1.00 1.00 1	1.00 ; 639 ;	0 1.00	1.00	1.00 1.05		1.05 1 251	1.00 1.05 389 317	7 00		MLF Adj: Final Vol.:	1.05 1	1.05 1 936	1.05 1 128	1.05 1. 45 5	1.05 1.05 599 16	05 1.00 16 30	0 1.00	1.00	1.00 1.	39	1.00 78
Sat/Lane: 1900 Hodule: Sat/Lane: 1900 1900 Adjustment: 0.95 1.00 Lanes: 1.00 0.00 Final Sat.: 1805 0	•	1900 : 0.85 : 1.00 (1.15)	1900 1900 1.00 1.00 0.00 0.00	1900	1900		1900 1900 1900 1309	1900 1900 0.95 1.00 1.00 2.00 1805 3800	1900 1.00 1.00 0.00 0		Saturation F Sat/Lane: Adjustment: Lanes: Final Sat.:	Flow Module: 1900 1900 0.98 0.98 0.07 1.70	1	1900 1 0.98 1 0.23 0 433	1900 19 1.00 1. 0.14 1. 259 34	1900 1900 1.00 1.00 1.81 0.05 3449 92	00 1900 00 0.95 05 1.00 92 1805	0 1900 5 0.93 0 0.52 5 916	1900 0.93 0.48 851	1900 19 0.95 0. 0.84 0.	1900 1900 0.90 0.39 0.39 0.663 1.	1900 0.90 0.77 1325
Capacity Analysis Module: Vol/Sat: 0.10 0.00 0 Crit Moves: * Green/Cycle: 0.49 0.00 0 Volume/Cap: 0.20 0.00 0	ysis Module 0.10 0.00 0.49 0.00 0.20 0.00	4. 4. 4. 8. 8.	0.00 0.00	0 00	0.00	0.19 **** 0.24 0.80	0.19 (0.24 (0.80 (0.19 (0	0.22 0.08 **** 0.27 0.51 0.80 0.16	0 00	- 0 00	Capacity Analysis Module Vol/Sat: 0.30 0.30 Crit Moves: **** Green/Cycle: 0.28 0.28 Volume/Cap: 1.06 1.06	1ysis M 0.30 0 0.28 0	Module: 0.30 0 **** 0.28 0	0.30 0 0.28 0 1.06 0	0.17 0.1 *** 0.20 0.2 0.87 0.8	0.17 0.17 **** 0.20 0.20 0.87 0.87	17 0.02 20 0.20 87 0.08	2 0.02 **** 0 0.20 8 0.08	0.02	0.06 0.20 0.29 0.29 0.	0.06 0 0.20 0	0.06
Level Of Service Module: Delay/veh: 9.2 0.0 17.9 User DelAdj: 1.00 1.00 AdjDel/veh: 9.2 0.0 17.9 Queue:	vice Module: 9.2 0.0 1 1.00 1.00 3	17.9 1.00 17.9 16	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.0	! *	27.0	28.6 8.6 1.00 1.00 28.6 8.6	.6 0.0 00 1.00 .6 0.0 5 0.0 *****	_ 0000*	Level Of Service Module: Delay/Veh: 61.2 61.2 User DelAdj: 1.00 1.00 AdjDel/Veh: 61.2 61.2 Queue: 3 39	 vice Mo 61.2 6 1.00 1 61.2 6	fodule: 61.2 6 1.00 1 61.2 6	61.2 3 1.00 1 61.2 3	32.5 32 32.5 32 32.5 32 * * * * * * * * * * * * * * * * * * *	32.5 32.5 1.00 1.00 32.5 32.5 18 1	.5 21.0 30 1.00 .5 21.0	0 21.0 0 1.00 1 21.0	21.0	22.0 22 1.00 1. 22.0 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	22.0 22.0 22.0 22.0

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1 1 1 1 1 1 1 1 1 1 1	F1 Minimu	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	t Vision 200 e/Minimum Ra: PM Peak Hour	0 EIS/	EIR	1 1 1 1 1				_	FISC	O/Port V Marine/N PM	FISCO/Port Vision 2000 I Minimum Marine/Minimum Rail PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Alternative PM Peak Hour	ıtive			
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #9 7th/New Middle Harbor	ations Method (Future Volume Altiddle Harbor	Comput	ation fe Volum	Report ne Alte	rhative			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	1994 HCM *********	Level Operati	Level Of Service Operations Method	Service Compu	Computation Report (Future Volume Alternative)	ort Alternat ******	*	*	! *
Cycle (sec): Loss Time (sec): Optimal Cycle:	******* 10): 5		<pre>critical Vol./Cap. (X):</pre>	Critical Vol./Cap. Average Delay (sec.	./Cap. y (sec/	(X): veh):	0.321 9.7 9.7	.321 9.7 B	Cycle (sec): Loss Time (sec): Optimal Cycle:	•	*********** 100 10 (Y+R 70	*	sec) Averaç Level	gal,	up. (X): sec/veh)	*	0.440 19.0	*
Approach:	Approach: North Bound Movement: L - T - R	: 4	South Bound East Bound	, J	East Bound	nd R	West B	Bound T - R	Approach: Movement:	, z	North Bound	Sout	South Bound		East Bound - T - R	West L	West Bound	. ~
Control:	Protected	Protected	otected		Protected Toclude	<u></u>	Protected Include	ted	Control: Rights:	Prot	Protected Include	Pro	Protected Include	- - Protected Include	otected Include	Prot	Protected Include	_
Min. Green: Lanes:		20 0	0	•	20	0 0	10 20	0 0	Min. Green: Lanes:	2 0	20 20 0 1 0	10		1 0	20 20 1 1 1	100		0 50
Volume Module:		: : :	:	<u>:</u>		-	:	• • •	Volume Module	: : : : :		- - -	,	22 00 00				
Base Vol: Growth Adj:	1.00	1.00 1.0	1.0	1.0	1.00	1.00.1	1.0	1.00	Growth Adj:	1.00 1.	1.0	1.0	.00 1.	1.00.1			Η.	100
Initial Bse: Added Vol:	000	0 0 127 0	00	00	592	0 0	95 402	- 0	Added Vol:	435	23 U 0 129		n 0	0 0			1 0	0
PasserByVol:	00	0 0 0	0 0	0 0	0 6	00	0 0	0 -	PasserByVol: Initial Fut:	43.5 0	0 0 23 129	0 6	23	0 0 0 23 20 454	0 0	926	0 624 1	ں 13
User Adj:	1.00	1.00		7	1.00	1.00			User Adj:			1.00	00.	1.00		1.00		00
PHF Adj: PHF Volume:	1.00 1.00 1. 0 0 1	1.00 1.00 1.00 127 0 0	0.1.00	1.00	1.00	. 00.1	1.00 1.00 95 402	1.00	PHF Adj: PHF Volume:	435 23	23 129	1.00 1	.00 23	0.4	4 468	1.00 I	.00 1.00 624 13	13
Reduct Vol:	00	0 0 0	0 0	00	0 6	0 0	0 0	0 -	Reduct Vol: Reduced Vol:	43.0	23 129	0 0	23 0	0 0 0 23 20 454	0 0	9 26	0 624 1	13
PCE Adj:		1.00		-	1.00	1.00	-	7	PCE Adj:	-		1.00	00	1.00				00 !
MLF Adj: Final Vol.:	1.00 1.00 1.	.00 1.00 1.00 127 0 0	0 1.00	1.00	1.05	1.05	1.00 1.05 95 422	1.05	MLF Adj: Final Vol.:	448	23 129	1.00.1	.00 23	00 1.00 1.10 23 20 499	.0 1.10 19 514	1.00 1.	05 1.05 655 1.4	14
Saturation Flow Module Sat/Lane: 1900 1900	;	1900 1900 1900	1900	1900	1900	1900	1900 1900	1 1 1 9 0 0	Saturation Flow Module: Sat/Lane: 1900 1900	low Module 1900 1900	le: 00 1900	1900	1	_	0 1900	1900 19	1900 1900	- °
Adjustment:	1.00 1.00 0.	0.85 1.00 1.00	00.1.00	1.00	1.00	0.00	0.95 1.00	1.00	Adjustment: Lanes:	2.00 0.15	37 0.87 15 0.85	1.00	0.93 0.93	3 0.95 0.92	0.92 8 1.52	1.00 1.	1.00 1.00	8 4 4
Sat.:	1900 0	0		_	3800	-			Final Sat.:			1805	1	1805	1			80
Capacity Ana	lysis Module	00.0 00.0 0.00	00.00	_	0.00 0.16	00.0	0.05 0.11	0.11	Capacity Anal	ysis 0.12	Module: 0.09 0.09	00.00	0.03 0.03	3 0.01 0.19	9 0.19	0.05 0.	0.18 0.18	81
Green/Cycle: Volume/Cap:	0.00 0.00	0.25 0.00 0.00 0.32 0.00 0.00		0.00	0.51	0.00	0.16 0.67 0.32 0.16		Green/Cycle: Volume/Cap:	0.23 0.29	29 0.29 32 0.32	0.14	0.20 0.20 0.13 0.13	0 0.16 0.37	3 0.53	0.10 0.	0.31 0.31 0.57 0.57	31
Level Of Service Module: Delay/Veh: 0.0 0.0 User DelAdj: 1.00 1.00 AdjDel/Veh: 0.0 0.0	1 41 2	20.1 0.0 0.0 20.1 0.0 1.00 20.1 0.0 0.0		-	9.3 1.00 9.3	0.0	24.0 3.8 24.0 3.8 24.0 3.8 2 4	3.8	Level Of Servel of Servel	Service Module: .: 22.1 18.1 .dj: 1.00 1.00 .h: 22.1 18.1	116: 1 18:1 20 1.00 1 18:1 1 3:4	23.7	21.2 21.2 1.00 1.00 21.2 21.2 1 1	2 23.3 16.4 0 1.00 1.00 2 23.3 16.4 1 0 11	4 16.4 0 1.00 4 16.4 1 1.00	29.919 1.001. 29.919	19.1 19.1 1.00 1.00 19.1 19.1 19.1 19.1	

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	Minim	FISCO/ mum Ma	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	um Rai Hour	EIS/E	IR	a)					Σ : : : :	FISC inimum 1	J/Port V Marine/M	t Vision 200 e/Minimum Ra PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	R native	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp	Level Of peration ******** ne St./	Service ************* 5th St./	Compute Future ******	Computation Report (Future Volume Alternative ************************************	eport e Alte:	rnativ	* * *		1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 *	section :	Level Of Servi 1994 HCM Operations Meth	Level Coperation	Level Of Service Operations Method	Compi od (Fut:	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	port Altern *****	ative)	! * · · · · · · · · · · · · · · · · · ·	
Cycle (sec): Loss Time (sec): Optimal Cycle:	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh) Optimal Cycle: 82 Level Of Service:	(Y+R =	12 (Y+R = '4 sec) Average Delay (sec/veh): 82 Level Of Service:	ritica verage evel 0	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	/Cap. (sec/rice:	(X): veh):	•	0.577 21.0 C	Cycle Loss T Optima	Cycle (sec): Loss Time (sec): Optimal Cycle:	c):	100 11 (Y+R 71	= 4 sec)	Crit: Avera Leve		Cap. (X) (sec/veh	р);	0.205 16.2	0.205 16.2 C
Approach: Movement:	North Bound	nd R	South Bound	und - R	ı Baş	East Bound	nd R	West Bound	Bound	Approach: Movement:	ich: int:		Bound - R	South	South Bound	East Bound	E Bound T - 1	* 1 * * 2	***** West	Bound . R
Control: Rights:	5	•	Protected	4	Spl	Split Phase Include		1	it Phase Include	Control: Rights:		1 H	,	Prot	red	<u> </u>	Split Phase Include	-	Split Phase Include	hase ude
Lanes:	1 0 1 1	0 0	1 0 1	1 0 1	1 1 1	0 0	0 0	1 0 0	7 70	Min. Green: Lanes:	reen:	0 0 1	0 20	00	20 2	20 10 0 0 1	20 1	20	10 20 0 1	1 0
Volume Module Base Vol:	0	- 0	241 0	69	138	157	0	0 202	2 616	Volume Mo Base Vol:	/olume Module: Base Vol:	: 0 194	281		144	30 31	97		32	
Growth Adj: Initial Bse:	1.00 1.00 1	. 00.1	1.00 1.00 241 0	1.00	1.00 1	1.00 1	1.00	-	1	Growth Adj: Initial Bse		-	-		ä	1.00	1.00 1.0		Η.	Η.
Added Vol:	186 172	533	0 102	0 0	0 0	0 0	105	363	0 0	Added Vol:	Vol:	00				1		-	1	
Initial Fut:			241 102	69	138			63		Initial Fut	byvol: 1 Fut:					30 31	97	18 2	0 0 218 31	34
User Adj: PHF Adj:	1.00 1.00 1	1.00	1.00 1.00	1.00	1.00.1	1.00.1	1.00	1.00 1.00	0 0.50	User Adj: PHF Adi:		1.00 1.00	1.00	1.00 1.	1.00 1.00	1.00	1.00 1.00	1.00	00 1.00	-i -
PHF Volume: Reduct Vol:	186 172 0 0	533	241 102	69	138	157	105	363 202	308	PHF Volume:						31			,	
Reduced Vol:			241 102	69	138			63		Reduced Vol		0					97 1		218 31	34 o
PCE Adj: MLF Adj:	1.00 1.00 1.100 1		1.00 1.00	1.00	1.00 1.00		1.00	1.00 1.00	0 1.00 S 1.05	PCE Adj: MLF Adj:		1.00 1.00	1.00	1.00 1.	1.00 1.00	1.00	1.00 1.00	00 1.00	00 1 00	1.00
Final Vol.:	: 186 172	533	241 107	72	152	173	116	363 212	- 1	Final Vol	1.:	0 213		0		33		-		34
Saturation Flow Module:	low Module:	-		-	_		=			Saturation	•	Flow Module		:				<u> </u> -	1	
Sat/Lane:	1900 1900 1	1900	1900 1900	1900	1900 1900		1900	1900 1900	0 1900	Sat/Lane:		1900 1900				1900			00 1 000	
Lanes:	1.00		1.00 1.20	0.80				000		Adjustment Lanes:				0.00 1.	1.65 0.35	0.43	0.97 0.97 1.32 0.25	37 0.95 25 1.00	35 1.00 30 1.00	1.00
rinal sat.:	1805 1900 1	1615	1805 2135	1437	1848	2104 1	1411	1805 1370	0 2088	Final Sat.	Sat.:	0 1713	3 3417	0 30	3041 645	790	2442 45	455 1805	1900	1615
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Crit Moves:	*							:	•	Crit Moves:	oves:			00.00.0	.0.0	0.04	0.04 0.04	0.12	2 0.02	0.02
Green/Cycle: Volume/Cap:	0.19 0.20 0.54 0.45	0.49	0.19 0.20 0.70 0.75	0.20	0.20 0.20 0.41		0.20	0.29 0.29 0.70 0.54	9 0.29	Green/Cycle: Volume/Cap:		0.00 0.35	0.35	0.00 0.35	0.35 0.35	0.20	0.20 0.20	20 0.34	14 0.34	0.34
						- 1	_	1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-		- :		:	_	? !	9
Level Of Service Module: Delay/Veh: 24.9 22.9	ά	13.8	28.5 21.8	21.8	722.7 22.7		22.7 2	23.3 19.8	8 19.8	Level Of S Delay/Veh:	ervi	Level Of Service Modul Delay/Veh: 0.0 15.6	.e:	0.0 14.4	.4 14.4	21.6	21.6 21.6	6 16.2	2 14 3	14.4
User DelAdj: 1.00 1.00		1.00	1.00 1.00	1.00	1.00 1.00		1.00			User DelAdj		.00 1.00	'	1.00 1.00	H.	1.00				1.00
Queue:			7 3	21.0	4. 4.			10 5	5 17.8	Adjbel/ven: Queue:		0.0 15.6	15.6	0.0 14.4	3 14.4	21.6	21.6 21.6	6 16.2	2 14.3	14.4
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B-PM.CMD		Te	Tue Nov 5, 1996 12:31:20	196 12:	:31:20			Page	16-1	B-PM.CMD		F	Tue Nov 5,	1996 12	12:31:20		Page	re 17-1	
	Minir	FISCO/1	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	on 2000 num Rai Hour	D EIS/E	SIR	Ď				Σ	FISC	FISCO/Port Vision 2000 EIS/EIR mum Marine/Minimum Rail Altern PM Peak Hour	t Vision 200 e/Minimum Ra PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	ive			•
	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	Level Of perations	Service Computation Report s Method (Future Volume Alt	Computa Future	ation F 9 Volum	Report	rnativ	(e) * * * * * * * * * * * * * * * * * * *	*		1994 HCM		Level Of Service Computation Re Operations Method (Future Volume	Comput (Futur	Computation Report (Future Volume Alternative)	t ternativ	re)	* * * *	*
Intersection	Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.	/ I-88(0 NB Ramps	, / Frc	ontage	Rd.	**	*	****	Intersection #16 7th St./ I-880 SB Ramps	#16 7ch	St./ I-8	7th St./ I-880 SB Ramps	ps	*******	*****	*	****	:
Cycle (sec):	100	, 2		ritica	l Vol.	Critical Vol./Cap. (X)	(x):		00	Cycle (sec):		100		Critic	Critical Vol./Cap. (X):	(x):	0	0.538	
Optimal Cycle:		4 1	מעכו	evel C	Level Of Service:	rice:	, (III)	U	· ·	Optimal Cycle			,	Level (Level Of Service:	. (110)		. 69	;
Approach:		:	South Bound	pund	Ea	East Bound	pu	West Bound	ound	Approach:	z,	Bound	South Bound	Bound	East Bound	bund	West	West Bound	
Movement:	- I - 1	: ×	T - 1	2	-	1	= = = = = = = = = = = = = = = = = = =		× - :	Movement:	- ;	× ;	7	:		- x	· ;		- - -
Control:	Protected	- -	Protected	eq	Pr	Protected	- -	Protected	ted	Control:	Protected	cted	Protected	cted	Protected	ed	Prot	Protected	-
Rights:	Include	e 20	0v1	5	5	Include	9 20	Include	ude 20	Rights: Min Green:	Inc	Include	Inc	Include 0 0	Include	ide 20	ui ot	Include	20
Lanes:			0	5 6	° -			0 0 1	-		0	0	0 0 0	0	0	0	0	0	
Volume Module:		<u>-</u>		1	<u>:</u>		-			Volume Module		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-		1 1 1 1 1		-
Base Vol:	0 197	м	7	205	0	108	0	0 53	н	Base Vol:	0	0 0		0 0		7	378	0	0
Growth Adj:	1.00	1.00.1	1.00 1.00	1.00	1.00			ä	1.00	Growth Adj:	1.0	0 1.0	1.00 1.00	1.0	1.00 1.0	1.00		1.00 1.00	00
Initial Bse:	0 197	m	00	205	0 0	108	0 0	0 53	r4 C	Initial Bse:	0 0	0 0	0 0	0 0	0 0	7	378	0 ,	0 0
Added Vol:	994	0		0 0	0 0	9 0	• •	7 0		PasserBvVol:						0		y 0	
Initial Fut:	466 197	, m		471	378	12	0	φ		Initial Fut:	0	0	0	0 0	39	652		742	. 0
User Adj:	1.00		1.00 1.00	1.00	1.00	1.00		Н	н	User Adj:	-	-			1.00		1.00,1.	-	.00
PHF Adj:	1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	÷.	1.00	PHF Adj:	1.00 1.00	0 1.00	1.00 1.00	0 1.00	1.001				00.
PHF Volume:	466 197	m C	9 6	4/4	8/s	971	-	9 0	- C	Reduct Vol:	,				985 0	700) B/1	747	.
Reduced Vol:	466 197	m	0 0	471	378	126	0	0 64		Reduced Vol:	0		0		39	652		742	. 0
PCE Adj:	1.00		1.00 1.00	1.00	1.00	1.00			-	PCE Adj:	1.00 1.00		1.00 1.00		1.00	1.00	1.00 1.		00.
MLF Adj:	1.00	1.00	1.0	1.13		1.05	1.00	.	1.05	MLF Adj:	1.0	1.0	1.00 1.00	1.0	1.00 1	1.00		1.05 1.00	00
Final Vol.:	480 197	۳ - ا	2 0	532	378	133	5	.9 0	1	Final Vol.:	0	0	0 !!	0 1	0 416	652	389 7	779	o -
Saturation Flow Module:	low Module:		; ; ; ; ; ;	-			-		-	tion	Flow Module:				-				_
Sat/Lane:		1900	1900 1900	1900	1900	1900		1900 1900	1900		1900 1900	0 1900	1900 1900	0 1900	1900 1900	1900	1900 19	1900 1900	00
Adjustment:	1.00			0.85	0.95	1.00		1.00 1.00	1.00	Adjustment:	1.00 1.00		1.00 1.00		1.00	0.85			00
Final Sat.:	3610 1872	29 1	1805 0	3230	1805	3800		•		Final Sat.:	0	0	90	0	0 3800	1615	3610 38	3800 0.00	3 0
																<u> </u>			-
Capacity Analysis Modul	au .		00.00.00.00	91.0	0.21	0.04	00.00	0.00 0.02	0.02	Capacity Analysis Module	lysis Modul	ule:	0.00 0.00	00.00	0.00 0.11	0.40	0.11 0.	0.20 0.00	0
Crit Moves:	! !		*		*					Crit Moves:						*			
Green/Cycle:	0.26			0.51	0.31	0.51		8		Green/Cycle:	0.00 00.00				0.00 0.7	0.75			00
Volume/Cap:	0.68 0.40 0	0.40	0.01 0.00	0.33	0.68	0.07	00.0	0.00 0.00	60.0	Volume/Cap:	0.00 0.00	00.0	0.00 0.00	00.0	0.00 0.15	0.54	0.54 0.22	22 0.00	e -
Level Of Service Module:	vice Module:	_				c				Level Of Service Modul	rice Modu		!			_	;		-
Delay/Ven: Heer Deladi	1.00 1.00	1,00	1.00 1.00	د. و 1	1.00 1.00		1.00	1.00 1.00	1.00	User DelAdi: 1.00 1.00	1.00 1.00	000.1	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00 1.00 1.00	-	0 0
AdjDel/Veh:	26.1 19.9		24.4 0.0	9.5			0.0			AdjDel/Veh:	0.0 0.0		0.0 0.0			3.8	23.8 0		0.0
Quene:	13 5	0	0	σ.	10	7	0	0	0	Onene:	0	0	0	0	0	80	10		0
*****	4	*****	***********	****	* * * * * * *	**************	* * * * *	* * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	****	******	******	******	******	*********	*****	*****	*****	:

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B-PM.CMD	Ţ	Tue Nov 5, 1996 12:31:20	:31:20	Page 18-1	B-PM.CMD	ር ረ	Tue Nov 5, 1996 1	12:31:20		Page 19	1-1
	FISCO Minimum M.	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	0 EIS/EIR il Alternative			FISC Minimum Þ	FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour	2000 EIS/EIR 1 Rail Alternative Cour	1	1 1 1 1 1 1	
Intersection	Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative Intersection #17 14th St./ I-880 Frontage Rd.	Level of Service Computation keport usignalized Method (Future Volume Al St./ I-880 Frontage Rd.	ation Report re Volume Alternat		19	Level Of 1994 HCM Operations	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ntersection #18 W.Grand Ave./ I-880 Frontage Rd.	Computation Report (Future Volume Alternative)	native)		* * *
Average Dela	Average Delay (sec/veh): 2.2 Worst Case Level Of Se	2.2 Wo	Worst Case Level Of Se		Cycle (sec):	**********	*	**************************************	(X):	*********	*
Approach:	orth Boun	South Bound	East Bound	West Bound	Loss Time (sec): Optimal Cycle:		= 4 sec) Averac	4 sec) Average Delay (sec/veh) Level Of Service:	reh):	21.9 C	
Movement:		٠,	ا د	¥ :		Worth Bound	South Bound	East	* * *	s *	nd
Concrol: Rights: Lanes:	Uncontrolled Include 0 0 1 1 0	Uncontrolled Include 1 0 2 0 0	scop sign Include 0 0 0 0	Stop Sign	Movement: 	Split Phase	- T - K - K	- T - L -	⊒ <u> </u> = =	- T - Protected Trolude	
	0	. 0	0 0	115 0 7	Min. Green: Lanes:	10 20 20 1 0 1 1 0	10 20 20 1 1 0 1 0	10	20 1	0 20 0 1 1	20
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 1 1 1	-
Added Vol:	0 378	266	0 0		ָ ע	5 72	0	86 277		456	330
PasserByVol: Initial Fut:	0 0 0 0	4 266 0	00	0 0 0 0	Growth Adj: 1. Initial Bse:	.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00	1.00
User Adj:	1.00 1.00		1.00 1.00	1.00	Added Vol:	229 14	168	0	6	, α	0
PHF Adj: PHF Volume:	1.00 1.00 1.00 0 440 130	1.00 1.00 1.00	0 0 0 0	11.00 1.00 1.00	PasserByvol: Initial Fut:	75 301 149	759 168	0 0 0 6 86 406	0 m	0 0	330
Reduct Vol:	0		0			1.00	1.00.1	1.00 1.00	Н	1.00	1.00
Final Vol.: 0 440 Adiusted Volume Module:	0 440 130 ume Module:	4 266 0	0	115 0 7	PHF Adj: 1.	1.00 1.00 1.00 75 301 149	1.00 1.00 1.00 759 168 6	1.00 1.00 1 86 406	.00 1.0	.00,1.00	1.00
Grade:	*0	*0	*0	*0	Reduct Vol:	0	0	90			0
* Cycle/Cars:	: xxxx xxxx	xxxx xxxx	xxxx xxxx		701:	301	168	86 406		551	330
* Truck/Comb: PCE Adi:		1.10 1.00 1.00	1.10 1.10 1.10	1.10 1.10 1.10	PCE Adj: 1	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00	1.00
Cycl/Car PCE:	xxxx xxxx	xxxx xxxx	xxxx xxxx	××	. ::	316	168	86 426		909	363
Trck/Cmb PCE:	Ŷ,	XXXX XXXX	xxxx xxx	xxxx xxx						1 1 1 1 1 1 1	
Adj Vol.: 0 44 Critical Gap Module:	Module:	4 266 0	0	171 0 8	Saturation Flow Module Sat/Lane: 1900 1900	ow Module: 1900 1900 1900	1900 1900	1900 1900	1900 1900	1900	1900
MoveUp Time:	MoveUp Time:xxxx xxxx xxxxx	2.1 xxxx xxxxx	2.1 xxxx xxxxx xxxxx xxxx	xxxx	 T	0.95 0.95 0.95	1.00	0.95 1.00		0.94	0.94
Critical Gp:	Critical Gp:xxxx xxxx xxxxx 5	5.5 xxxx xxxxx	5.5 xxxx xxxxx xxxxx xxxx 7	7.0 xxxx 5.5	Lanes: 1	1.00 1.34 0.66	2.00 0.97 0.03	1.00 1.99	0.01 1.00	1.88	1.12
Capacity Module:					. ;		# # TO T		=	1000	
Cnflict Vol:	Cnflict Vol: xxxx xxxx xxxx	XXXX	xxxx xxxx	xxxx	Anal	Module:	;	;			-
Forent Lap.:	Forent Cap.: xxxx xxxx xxxxx	1 00 xxxx xxxxx	XXXX XXXX XXXXX	338 XXXX 993	VOI/Sat:	0.04 0.13 0.13	0.22 0.09 0.09	0.05 0.11	0.11 0.05	0.18	0.18
Move Cap.:	XXXX XXXX XXXX	XXXX	XXXX XXXX	XXXX		0.20 0.20 0.20	0	0.10 0.24	0.24 0.12	0.27	0.27
						0.65 0.6	0.28	0.48 0.46 0	0	0.68	0.68
Level Of Ser	Level Of Service Module:	4 3 2000 2000	******	76 2 2000	Treatment of Court						
LOS by Move:	* * *	* * * * *	* * * * * * * * * * * * * * * * * * *	* *	Delay/Veh: 21	21.6 25.3 25.3	19.9 16.2 16.2	29.0 21.1	27	.3 22.2	22.2
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT		1.00 1.	0 1.00	1.00 1.00	1.00 1.00	1.00	1.00
Shared Cap.:	Shared Cap.: xxxx xxxx xxxxx	XXXX XXXX	XXXX XXXX XXXX	XXXX			16.2	29.0 21.1		22.2	22.2
Shrd StpDel:	Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx	XXXXX XXXX XXXXX	XXXXX XXXX XXXXX	xxxxx xxxx xxxxx	Queue:	2 8 4	20 3	0 2 10	0	3 16	10
ApproachDel:	0.0	0.1	0.0	15					*	***	*
•					•						
Traffix 6.	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	owling Assoc. Lie	censed to Dowling	Assoc., Oakland	Traffix 6.8.	0306 (c) 1996 D	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	icensed to Dowl	ing Asso	c., Oakl	and

Tue Nov 5, 1996 13:07:09

C-AM.CMD

	C-AM.CMD Tue Nov 5, 1996 13:07:09 Page 1-2	1-2
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	0 EIS/EIR 1 Alternative	
Trip Generation Report	AM Feak hour	
Forecast for AM Peak Hour	Zone Rate Trips Total % Of # Subzone Amount Units In Out In Out Trips Tota	% Of Total
Zone # Subzone Amount Units In Out In Out Trips Total	Zone 26 Subtotal	7.4
1 New Harbor 1135.00 Employees 0.26 0.05 295 57 352 5.5 Zone 1 Subtotal	1.00 Truck External 276.00 294.00 276 294 570 Subtotal 276 294 570	8.8 8.8
3 J.I.T. 208.00 Employees 0.40 0.09 83 19 102 1.6 Zone 3 Subtotal	28 Outer Harbor 1.00 Truck External 318.00 338.00 318 338 656 10. Zone 28 Subtotal	10.2
4 SP Rail Term 210.00 Employees 0.40 0.09 84 19 103 1.6 Zone 4 Subtotal	TOTAL	100.0
6 Middle Harbr 516.00 Employees 0.26 0.05 134 26 160 2.5 Zone 6 Subtotal		
7 7th St Harbr 613.00 Employees 0.26 0.05 159 31 190 2.9 Zone 7 Subtotal		
8 Outer Harbor 706.00 Employees 0.26 0.05 184 35 219 3.4 Zone 8 Subtotal		
10 New Park 1.00 Total Trips 31.00 19.00 31 19 50 0.8 Zone 10 Subtotal		
11 New Harbor 1.00 Trucks Inter 300.00 320.00 300 320 620 9.6 Zone 11 Subtotal		
16 Middle Harbr 1.00 Trucks Inter 136.00 145.00 136 145 281 4.4 Zone 16 Subtotal		
17 7th St Harbr 1.00 Trucks Inter 162.00 173.00 162 173 335 5.2 Zone 17 Subtotal		
18 Outer Harbor 1.00 Trucks Inter 187.00 199.00 187 199 386 6.0 Zone 18 Subtotal		
21 New Harbor 1.00 Truck External 511.00 544.00 511 544 1055 16.4 Zone 21 Subtotal		
23 J.I.T. 1.00 Truck External 214.00 228.00 214 228 442 6.9 Zone 23 Subtotal		
24 SP Rail Term 1.00 Truck External 217.00 231.00 217 231 448 6.9 Zone 24 Subtotal		
26 Middle Harbr 1.00 Truck External 232.00 247.00 232 247 479 7.4		
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C-AM.CMD

Zone

3-1) 	1 1 1 4 1	Westbound Total Left Thru Right Volume		375	866	1373		603	1509	2112		599	2264	2863		1	54	3488	3542		683	1444	2127		299	1942	2241		c	2173	2173			1313	866	2311		1186	1942	3128	
Page 3		1	a ight V		0	0	0		87	0	8.7		0	0	0		;	54	471	525		0	c	0		35	, c	56		c	0	0		,	υ,	0	6		364	0	364	
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60:7	EIS/EIR Alternative	port	Eastbound Left Thru Right		0	0	0		0	0			0	0			•			412		0	205	205		9		9		0	17	517					394		51			
13:07:09		nt Reg	East eft Th		0	106	901		0	81	81		69	123	192		,			358 4				0		œ		- ω		0	. 0			•		.	48		256	0		
1996	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	Turning Movement Report AM Peak Hour					177		0	105	105		334				,			428		0	0	0		26	0	26		0	0	0	Tage Oggan	Kamp	- c	۰ ;	47	Ramp				
Nov 5,	ort Vi ne/Mir AM E	ning N AM E	Southbound [.] Left Thru Right				713 1				582	ç					,			176 4	Rd	0	0	0		0		<u> </u>		0	0	0	7 . B	7-880	no c	> 0	ω					
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	FI	; ; ; ;		na St.		0	0	St.	6	0	o.	Ť.		0	0		Extension		D.		#7 Middle Harbor/New Mddl Hrbr	45	ف	4	St.			31	Harbor	0	2	Ñ	7 c c c c c c c c c c c c c c c c c c c									
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			Northbound Left Thru Right			0 290		ne St./			408 300	/ St. /		4					3 159		Harbo	m	0		St./			8 828	Midd	0	0		/ 45 OH	יי פרי	2				0		2 163	
C-AM.CMD			Θ	#3 Maritime			I	#4 Maritime				#5 Maritime	159				th St./			1 233	iddle	L			#8 Adeline		ъ	7	#9 7th/New Middle		ਧ	_	#12 Maritime	יומדדורד	700		294	#13 Adeline				
C-AM	1		Volume Type	Σ #	Base	Added	Total	# A	Base	Added	Total	# **	Base	Added	Total		#6 7th	Base	Added	Total	#7 X	Base	Added	Total	¥8	Base	Added	Total	49 7	Base	Added	Total	101#	414	מיקים א	300	Total	#13	Base	Added	Total	
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Tue Nov	O/Por arine	rip D	£ £	# !		5.0	0.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	2.0	2.0	9 6	9 0	2.0	2.0																						
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nion St. 0 0 0 575 575 575 575 14 St./ 0	Northbound Left Thru Right	Le.	Southbound Left Thru Right	;	Eas left Ti	Eastbound Left Thiu Right	;	Nest Left Th	Westbound Total	T ht Vo	Total Volume	Volume Type	Northbound Left Thru Right	Northbound t Thru Rig	1	Southbound Left Thru Right	Southbound t Thru Rig	:	Eastbound Left Thru Right	Eastbound t Thru Ri	:	Wes Left T	Westbound Left Thru Right	ght v	Total Volume
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00	I-880	Frontage	Rd.									#170													
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l.Gran	I-8		Frontage Rd.									#177					!	,		;	i				
σ,		67	48	9		234	12		52		1653	Base	0	0	0	•	-351	0		-129	0	0		0	-480
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			0	0	0	0	0	0	0	0	322	Added	0	0	0	0	0	0	0	1051	0	0	0	0	1051
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	: : : :	1 1 1 1 1 1	Σ X	FIS	CO/Po Marin	rt Vis e/Mini AM Pe	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	000 EI ail Al	S/EIR ternat	ive								Maxi	FISCO	FISCO/Port um Marine/1	FISCO/Port Vision 200 Maximum Marine/Minimum Rai AM Peak Hour	n 2000 m Rail Hour		EIS/EIR Alternative				
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#217															Added	616	707	1323	426	290	716	466	512	979	109	0	0	3018
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#244										,				•	Total	429	1069	1497	91	90	181	1366	641	2007	426	512	937	4623
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			Maxim	FISCO	/Port rine/l	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	n 200(m Rail Hour	0 EIS/EIR 1 Alterna	EIR	φ							Maxi	FISCO	/Port rine/	FISCO/Port Vision 200 um Marine/Minimum Rai AM Peak Hour	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	EIS/EIR Alterna	EIS/EIR Alternative		; ; ; ;	1 1 1 1	1 1 1 F
Volume Type	N	NB Link Out To	ink Total	ä	SB Link Out To	ink Total		EB Link Out To	ink Total	n I	WB Link Out To	ta]	Total	Volume Type	. E	NB Link Out To	ink Total	ä	SB Link Out To	ink Total	E E	EB Link Out To	ink Total	3 UI	WB Link Out To	tal V	Total
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#15 7th Base Added Total 1	St./ 569 575 1144	I-880	I-880 NB Ramps / 0 569 111 0 575 436 0 1144 547	111 436 547		Frontage Rd 549 660 383 819 932 1479	16 386 402	156 1022 1178	172 1408 1580	63 12 75	54 3 57	117 14 131	1518 2815 4333	#161 Base Added Total	000	-464 538 74	-464 538 74	-178 163 -15	000	-178 163 -15	-286 375 89	000	-286 375 89	000	000	000	-928 1076 148
#16 7th St./ I-880 SB Ramps Base 0 65 65 Added 0 478 478 Total 0 543 543	St./ 0 0	I-880 65 478 543	SB Ra 65 478 543	Sqima O O	000	000	864 864	0 1022 1022	0 1886 1886	65 1022 1087	386 386	65 1408 1473	130 3772 3902	#165 Base Added Total	000	-722 649 -73	-722 649 -73	-227 171 -56	000	-227 171 -56	-495 478 -17	000	-495 478 -17	000	000	000	-1444 1298 -146
#17 14th St./ I-880 Frontage Base 89 140 229 30 Added 383 436 819 436 Total 472 576 1048 466	h St./ 89 383 472	/ I-88(140 436 576 ;	0 Fron 229 819 1048		Rd. 6 383 389	36 819 855	000	000	000	146 0 146	119	265 0 265	530 1638 2168	#170 Base Added Total	-717 666 -51	000	-717 666 -51	000	-153 92 -61	-153 92 -61	000	000	000	000	564 - 575 11	564 . 575	-1434 1333 -101
#18 W.Grand Ave./ I-880 Frontage Rd Base 9 60 69 732 514 Added 383 436 819 299 271 Total 392 496 888 1031 785	rand A 9 383 392	436 436 496	I-880 69 819 888	Fronta 732 299 1031	age Rd 514 271 785	d. 1246 570 1816	311 102 413	167 117 284	478 218 696	601 253 854	912 214 1126	1513 467 1980	3306 2074 5380	#177 Base Added Total	000	-351 418 67	-351 418 67	-351 418 67	000	-351 418 67	-129 110 -19	000	-129 110 -19	000	-129 '- 110 -19	-129 110 -19	-960 1056 96
#134 Base Added Total	0 389 389	0 415 415	0 805 805	0,0	000	000	247 247	0 297 297	544 544	0 712 712	0 636 636	1349 1349	0 2697 2697	#178 Base Added Total	-266 335 69	000	-266 335 69	000	-370 408 38	-370 408 38	-129 110 -19	000	-129 110 -19	000	-25 36 11	-25 36 11	-790 889 99
#138 Base . Added Total .	-156 - 0 -156 -	-173	-329 0 -329	-199 -	-180 0 -180	-379 0 -379	-24	-26	-50 0 -50	000	000	000	-758 0 -758	#182 Base Added Total	-370 408 38	000	-370 408 38	-475 - 513 38	-370 408 38	-845 921 76	000	-475 513 38	-475 513 38	000	000		-1690 1843 153
#158 Base . Added Total	-309 322 13		-309 322 13	000	-180 212 32	-180 212 32	000	000	000	000	-129 110 -19	-129 110 -19	-618 644 26	#201 Base Added Total	000	000	• • •	000	000	000	-932 1051 119	000	-932 1051 .119	0 0 0	-932 - 1051 1 119	-932 . 1051 119	-1864 2103 239
#159 Base Added Total	-180 212 32		-180 212 32	000	000	000	000	-358 375 17	-358 375 17	-178 163 -15	000	-178 163 -15	-716 750 34	#204 Base Added Total	000	-580 658 78	-580 658 78	-932 1051 119	000	-932 1051 119	000	000	000	m - 0	52 93 1	-352 - 393 41	-1864 2103 239

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C-AM.CMD	۵			Tue	Nov 5	Tue Nov 5, 1996 13:07:09	13:07	60:			Pa	Page 4-4	,	C-AM.CMD Tue Nov 5, 1996 13:07:09	Page 5-1
!	1 1 1 1		Maxim	FISCO/	'Port V ine/Mi	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	ZOOO E Rail A	SIS/EI	R ative	! ! !	; ; ;	! ! !	:	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	
Volume Type	N EI	NB Link Out Total	ik oral	w 2	SB Link Cut Total	1	In Sc	ER Dink Out Total	1 3	Mar 11.	tink t Total	} - 2*	Total Total	Impact Analysis Report Level Of Service	
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#214 Base	0	546	-546	0	0	0		-564 -		-1110	0 -11	'	2220	# 5 Maritime St./ 7th St. Extensio B 12.7 0.071 B 12.1 0.588 -	-0.581 D/V
Added	00		710	00	00	00	υ 00	575 11	575 1 11	1284 174		1284 2	2568 348	# 6 7th St./ 7th St. Extension C 16.4 0.000 C 24.9 0.672 +	. 8.542 D/V
#217														# 7 Middle Harbor/New Mddl Hrbr Rd B 6.6 0.167 C 16.8 0.736 +1	+10.155 D/V
Base	00	-45 35	-45 35	-45 35	00	-45 35	-25 36	00	-25 36	, 00		-25 36	.140 142	# 8 Adeline St./ 3rd St. B 8.7 0.064 F 111.2 0.705 +1	+102.460 D/V
Total	0	-10	-10	-10	0	-10	::	0	11		11	11	7	# 9 7th/New Middle Harbor 0.0 0.000 C 20.7 0.810 +2	+20.677 D/V
#218 Base	-21		-21	0	-42	-42	-25	0	-25		4-	4	- 92	# 12 Maritime St./ W.Grand Ave./ I- B 12.0 0.242 C 17.1 0.547 +	. 5.120 D/V
Added Total	15	00	15	o o	47	47	36 11	00	36 11	00	4 0	4 0-	102 10	# 13 Adeline St./ 5th St./ I-880 SB C 18.3 0.236 D 28.2 0.789 +	N/G 906.6
#219														# 14 Union St./ 5th St./ I-880 Nort C 16.4 0.104 C 17.0 0.137 +	0.629 D/V
Base Added	-43	00	-43	00	-43	-43		-20	-20	-20			-126 134	# 15 7th St./ I-880 NB Ramps / Fron B 13.0 0.366 C 22.8 0.605 +	9.827 D/V
Total	4	0	4	0	₹	4	0	0	0	0	0	0	œ	# 16 7th St./ I-880 SB Ramps A 0.1 0.020 A 1.4 0.331 +	+ 1.291 D/V
#220 Base	0	-45	-45	-79	0	-79		-54	- 54	-20	0		-198	# 17 14th St./ I-880 Frontage Rd. A 2.8 0.000 D 3.9 0.000 +	0.000 V/C
Added Total	00	35	35	82 3	00	33	o o	14	14	0 0	00	000	205	# 18 W.Grand Ave./ I-880 Frontage R C 19.9 0.237 C 21.2 0.544 +	1.301 D/V
#225	ć	c	c	c	200	- 20		- 961-	. 968-	-416		-416	-832		
base Added	0 0	0	0	0	20	50				457		457	914		
Total	0	0	0	0	0	0		41	41	41		41	82		
#226	c	c	c	•	c	5	353		- 352	ر بر -	٠	356	-712		
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#244	c	c	c	288	215-	. 009-	- 359	-333	-692	-45		- 92	-1384		
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Total	0	0	0	-38	-11	-49	364	313	929	351		725	1353		

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C-AM, CMD.		Ţ,	Tue Nov 5, 1996 1	1996 13:07:09			Page	6-1	C-AM.CMD		Tue	Tue Nov 5, 19	1996 13:07:09	7:09		Page	7-1
1 1 1 1 1 1 1 1 1 1 1	Махіп	FISCO,	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alterna AM Peak Hour		EIS/EIR Alternative					Maxir	FISCO/I	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	m Rail Hour	EIS/EIR Alternative		 	1 1 1 1
1	Level Of Service 1994 HCM Operations Method	evel Of		Computation Report (Future Volume Alternative	Report ne Alte	rnativ	(e) ************************************	***	*****	Le 1994 HCM Ope	Level Of perations	Level Of Service C Operations Method (omputat Future	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative)	ernativ	re)	:
Intersection #3 Maritime St./ Burma St.	#3 Maritime	s St./	Intersection #3 Maritime St.	***	***	*	*	***	Intersection #4 Maritime St. / 14th St.	#4 Maritim	e St./ 1	*	* * * * * *	************	***	* * * *	****
Cvcle (sec):	100		Criti	Critical Vol./Cap.	/Cap.	 ×	0.278	8/	Cycle (sec):	100		υ	Critical	Vol./Cap.	: (x)	0.819	6
		8 (Y+R =	4 sec)	age Delay	/sec/	veh):	80	8.8	Loss Time (sec):	BC): 8	(Y+R =	4 sec) A	Average Delay	Delay (sec	:/veh):	20.8	ω (
Optimal Cycle:	58	****	Level Of Service:	1 Of Serv	Service:	* * * * *	************	m	Optimal Cycle:	*****	******	*******	*****	**************************************	*****	********	* * * *
Approach:			South Bound	Ea	East Bound	pu	West Bo	Bound	Approach:	North Bound	pun	South Bound	pun	East	pun	West Bound	hund
Movement:	L - T -	ب ع	L - T - R	- II	٠ ٢	₩ =	L - T	ex	Movement:	1	<u>-</u> - یم	L - 1	- R	1 T	۳ - ۳	L - T	- R
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Volume Module:	••	-	_	•		•			Volume Module						,	,	ļ
Base Vol:	5 78	0	287	0	0	'n		0	Base Vol:	•			0 ;	0 8	0 9		87
	1.00	1.00	-	1.00	1.0	1.00	о. О	1.00	Growth Adj:	1.00 1.00	1.00.1	1.00 1.00	00.1	1.00 1.00	T . 00	22 00.1	1.00
Initial Bse:	5 78	0 0	0 287	0 0 0	o c	nς		.	Added Vol:	N	60		105	81 0	385		50
Added Vol:		o c	9 0						PasserByVol:		0		0	0	0	0	0
Initial Fut:	36	0	713	7	0	Ŋ	0	0	Initial Fut:	408 300	39	103 582	105		385		87
		1.00	1.00 1.00 1.00	1.00	1.00	1.00	1.00 1.00	1.00	User Adj:	1.00 1.00			1.00		1.00	1.00 1.00	1.00
	1.00 1.00	1.00	1.00	1.00	1.0	1.00	٥.	1.00	PHF Adj:	-		-	1.00	1.0	1.00	1.00'1.00	1.00
PHF Volume:	36	0	713	2	0 0	v c	0 (0 0	PHF Volume:	408 300	א כ	103 582	501	78	282 C	22	<u>,</u>
Reduct Vol:	0 10	0 0	, 0	0 0	o c	ט ע		- c	Reduced Vol:	30	9 6	58	105	81 0	385	•	87
pre adi.	-	1.00	1.00	1.00	1.00	1.00	1.0	1.00	PCE Adj:	-		М	1.00	1.00 1.00	1.00	1.00 1.00	1.00
MLF Adi:	1.00 1.05	1.05		1.00	1.00	1.00	-		MLF Adj:	1.00 1.05		1.00 1.05	1.05	1.00 1.00	1.00	1.00 1.00	1.00
Final Vol.:	5 386	0	749	185 106	0	w i	0	۰,	Final Vol.:	408 315	41	103 612	110	81 0	385	22 0	87
									1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					1		! ! ! ! ! !	!
Saturation Flow Module:	ow Module:		0001	0001 0001	000	000	0001	1900		1900 1900	1900	1900 1900	1900	1900 1900	1900	1900 1900	1900
Sat/Lane:	1900 1900	1.00			1.00	0.85			Adjustment:						0.73	0.57 1.00	0.85
Lanes:	1.00 2.00	00.0	1.60		00.0	1.00			Lanes:	1.00 1.77			0.30	0.0	0.83	0.0	1.00
Final Sat.:	1805 3800	0	2956	730 1805	0	1615	0	o ⁻	Final Sat.:	1805 3295	429 1	1805 3157	567	243 0	1153	1083 0	1615
Capacity Analysis Module:	ysis Module		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-	 	- 1 1 1	Capacity Analysis		=		-		= ;		
Vol/Sat:	0.00 0.10	00.0	0.00 0.25 0.25	25 0.06	00.0	00.00	0.00 00.0	00.00	Vol/Sat:	0.23 0.10	0.10	0.06 0.19	0.19	0.33 0.00	0.33	0.02 0.00	0.05
Crit Moves:			* *			6			Crit Moves:	2000	,	17 0 77	,	0000	9 0	00 0	. 6
Green/Cycle:	0.10 0.48	00.0	0.00 0.62 0.62	41 0.29	00.00	0.02	0.00 0.00	00.0	Volume/Cap:						0.49		0.13
VOLUME) Cap.				_		=		:			<u></u>			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u></u>	1 1 1 1 1 1 1	
Level Of Serv	Of Service Module:	- 0.0	0.0 6.3 6	6.3 22.1	0.0	20.7	0.0 0.0	. 0.0	Level Of Service Module Delay/Veh: 29.1 15.5	vice Module: 29.1 15.5	15.5	23.8 27.7	27.7	23.4 0.0	5.2	11.6 0.0	12.0
User DelAdi:	1.00 1	1.00	1.00		1.00	1.00	-	-	User DelAdj:	1.00 1.00				Н	1.00	Н	1.00
AdjDel/Veh:		0.0			0.0	20.7			AdjDel/Veh:	29.1 15.5	15.5 2	23.8 27.7	27.7	23.4 0.0	5.2	11.6 0.0	12.0
Onene:	9	0	0 11	3	0	0	0	0	Onene:	12 6	-	3 17	₹ .	0 8	5	0 0	7
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C-AM.CMD	1	Tue Nov 5, 19	5, 1996 13:07:09	:07:09			Page	le 8-1	C-AM. CMD	:	Tue N	Nov 5, 1	1996 13:0	13:07:09		Page	9-1
1 1 1 1 1 1 1 1 1 1	FISC Maximum Þ	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alterna AM Peak Hour	on 2000 um Rail k Hour	0 EIS/	EIS/EIR Alternative	a n				F	FISCO/Port um Marine/N	FISCO/Port Vision 200 Maximum Marine/Minimum Rai AM Peak Hour	on 2000 um Rail c Hour	EIS/EIR Alternative	θ		1
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	Of Service Computation Report ions Method (Future Volume Alt	Computa (Future	ation e Volument	Report me Alte	ernativ	re) * * * * *	***************************************	1994 HCM ************************************	Level 1994 HCM Operati ************************************	ations	Level Of Service Com 1 Operations Method (Fu	Computation (Future	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative) ***********************************	ernativ	re)	*
*******	***************************************	*********	****	*****	*****	*****	****	*******	*****		*****	*****	*****	************	******	********	******
Cycle (sec):	100		Critica	al Vol	Critical Vol./Cap. (X)	: (X	0	0.588	Cycle (sec):	100		í	Critica	Critical Vol./Cap.	(x):	0.672	72
Loss Time (sec): Optimal Cycle:	ec): 8 (Y+R = e: 48		Average Delay (se Level Of Service:	e Dela Of Ser	sec) Average Delay (sec/ven): Level Of Service:	(ven):	-	12.1 B	Loss lime (sec): Optimal Cycle:	: 68	X + X	4 sec	Average Level Of	Average Detay (sec/ven) Level Of Service:	:/ ven/ :	*7	2. 1 .9
*****	*	***************************************	* * * * *	* ·	*********	*****	* * * * * * * * * * * * * * * * * * * *	**********	***************************************	**************************************	* * * * * *	**************************************	******	**************************************	******	**************************************	**************************************
Approach: Movement:	L T - R	T - 1	۔ م	i .		٠ د	ı,	2	Movement:	- T	_ Z	F-	- بر	L - T	ez -		٠ ٣
	Drotented		red f		Protected	 a	Protected	cted	Control:	Protected	-	Protected	ed	Protected	ed	Protected	ted
Rights:	Include	001			0v1		Inc		Rights:	H		ī		Ħ		U	
Min. Green:	10 20 0	0 20	- 50	۰ ۱	۰ .	20	000	000	Min. Green: Lanes:	10 20	0 70	10 20 0 1	0 70	10 20	20 1 0	0 20	0 10
rolles:		, ;	- ;	- ;	, ;	- 1		, ;		- ;	=			-			
ᇽ	- •								Volume Module				,		•		
Base Vol:	0	0			0 ;	37	0 9	•	Base Vol:			0 0	٥,	0 0	0 6	0 6	
Growth Adj:	1.00 1.0	0 1.00 1.00	1.00		1.00 1.00	1.00	1.00 1.0	00.1	Growth Adj:	T 00.T 00.T	7 00.1	00.1 00.1	00.1	00.1 00.1	00.1	00.1 00.1	
Added Vol:	495 493 (0 26		-		446			Added Vol:	15		17	428	41	248	4	4
PasserByVol:	0	0 0 0			0	0			PasserByVol:	0			0		0		
Initial Fut:	493	0			0	483	0	,	Initial Fut:	233 159		403 176		358 412		58	
User Adj:		1.00			1.00	1.00	٠,	н,	User Adj:			1.00 1.00	00.1	1.00 1.00	1.00	1.00 1.00	1.00
PHF Adj:	1.00 1.00 1.00	0 1.00 1.00	1.00 479	192	0.1	483	0 1.00	0.1	PAF AGJ:	159	49 49		428		248	58 493	
Reduct Vol:	0	0			0	0		0	Reduct Vol:		0	0	0		0	0	
Reduced Vol:	493				0	483			Reduced Vol:	159		403 176		358 412		58 493	
PCE Adj:	1.00	1.00			1.00	1.00	~	-	PCE Adj:	1.00					1.00		
MLF Adj:	-	1.00 1	-	_	1.00	1.00	1.0	1.0	MLF Adj:	1.00 1.05 1	1.05	00 1.00	1.00	1.00 1.05	1.00	1.00 1.05	1.00
Final Vol.:	673 518	0 0 589	479	198	9	483	5	0	Final Vol.:	- ;	=	- ;	428	:	248	1	
Saturation Flow Module:	low Module:			-		-			Saturation F	 Flow Module:	=		-		-		-
Sat/Lane:					1900 1900	1900			Sat/Lane:				1900		1900		
Adjustment:	1.00	1.00			1.00	0.85	8		•	0.96	υ,	-	0.85		0.85		
Lanes: Final Sat.:	2.00 2.00 0.00 3610 3800 0.00	0 0.00 2.00	1.00	3610	0.00	1.00	0.000.00	00.00	Lanes: Final Sat.:	1805 2782	866 18	805 1900	1615	1.00 2.00	1615	1805 3800	1615
			1	==			1 1 1 1 1 1 1	-		-	=			1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1	
Capacity Analysis Module	lysis Module:	51.0 00.0 0	0.30	0.05	00.00	0.30	0.00 0.00	00.00	Capacity Anal Vol/Sat:	ysis Module 0.13 0.06	0.06	0.22 0.09	0.27	0.20 0.11	0.15	0.03 0.14	0.33
Crit Moves:						* * * *			Crit Moves:	* * * *						***	
Green/Cycle:	0.35 0.71		0.57		00.00	0.56			Green/Cycle:	0.20			0.32				
	0.19 0.0	_	0.52	0.26	00.00	0.54	0.00 0.00	00.00	Volume/Cap:	0.83 0.30 0	0.30 0.	0.81 0.29	0.83	0.81 0.57	0.77	0.13 0.68	0.68
Level Of Ser	Service Module:	-	! ! ! !	_		-			Level Of Service Module:	vice Module:	=				_		_
Delay/Veh:	17.4 3.1	0.0			0.0	9.6			Delay/Veh:	22.1						19.1 25.7	
User DelAdj:	1.00 1.00 1	н	-		-	1.00	-	-	User DelAdj:	1.00		1.00 1.00		1.00 1.00			
AdjDel/Veh:	m.	0.0 15.6	œ °	21.4	0.0	ο. ο.	0.0	0.0	Adjuel/ven:	39.0 22.1 2.	22.1.22	28.6 16.5	رد د د د	30.52 23.8	٤٠/3	13.1 23.7	L4.3
Queue:	TO C CI	*****	* * * * * * * * * * * * * * * * * * * *		*********	* * *	*****	*****	*********	*********	* * * *	******	******	********	*****	*******	******

C-AM.CMD		Ţ	Tue Nov 5, 1	1996 13:07:09	60:20:			Page	Page 10-1	C-AM.CMD		Ţ	Tue Nov 5, 1	1996 13	13:07:09		-	Page 11	11-1
	Maxi	FISCO,	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	t Vision 200/ /Minimum Rai AM Peak Hour	00 EIS/EIR 11 Alternative	Rative					Max	FISCO	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	t Vision 200 /Minimum Rai AM Peak Hour	EIS/EIR	ive		 	1 1 1 1
1994 NCM Operations Method (Future Volume Alternative Intersection #7 Middle Harbor/New Mddl Hrbr Rd	Level Of Service 1994 NCM Quistions Method #7 Middle Harbor/New Mddl	Level Of perations Harbor/A	f Service na Method /New Mddl	Comput (Futur	Service Computation Report Method (Future Volume Alternative New Mddl Hrbr Rd	Port Alter				1994 HCM Operat	I 1994 HCM Op ************************************	Level Of HCM Operations	Level Of Service Computation R Operations Method (Future Volum ************************************		Computation Report (Future Volume Alternative)	eport e Alternative	ive)	!	* *
**************************************	********	*****	********	*****	*****	* * * * * *	. * * * * * *	******	********	*****	**********		*	****	******	*****	*****	******	***
Cycle (sec):	100			Critic	Critical Vol./Cap.		: (x)		0.736	Cycle (sec):	100	_		Critica	Critical Vol./Cap.	p. (x) :		0.705	
£		0 (Y+R =		Averag	4 sec) Average Delay (sec/veh):	(sec/v	=h):	ĩ	16.8		iec): 12	(Y+R	= 4 sec)	Average	Average Delay (sec/veh)	ec/veh)		111.2	
Optimal Cycle:	98 : a			Level Of	of Service				υ	Optimal Cycle				Level (Of Service:			Ľ.	
	:		•	. 1			•			* * * * * * * * * * * * * * * * * * * *		* * * * * * * * * * * * * * * * * * * *	* 1 1 1 0 0 * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *		* * * * * * * * * * *	***	******	* * * 1
Approach: Movement:	North Bound	und - R	South Bound	souna - R	L Eds	edst Bound - T -	œ	L - T	Bound F - R	Approach: Movement:	L - T	bound R	L - T -	Sound - R	L . T	Bound F - R	ר ה	west Bound	2 2 3 3
		=		1			=======================================										= 3	4, (40	-
Control: Rights:	Include	de de	Include	ude	I	Include		Inci	Include	Rights:	Include	ide	Include	ude	Inc	Include	1	Include	le le
Min. Green:	10 0		0	0	0	20	20	10 20	0 0	Min. Green:	10 20	20	10 20		10 20	0 20	10	20	20
Lanes:	0 0 1		0	0	0	1 1		7 0 1	0	Lanes:	0 1 0	1 0	0 1 0	0 7	0 1 0	н	0	0 1	0
Volume Module	· · · · · ·	!!!!!	<u> </u>	! ! !		:	=			Volume Module	 e:	-	1	! ! !		; ; ; ;			1
Base Vol:	53 0	45	0	0	•	0	39 2	208 338	8	Base Vol:	8 0	31	26 0) 26	80	6 29	20	59	99
Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00		7	7	1.0	Growth Adj:	1.00 1.0	1.00	1.0	۲.	1.0	i.	ŗ.		1.00
Initial Bse:	53 0	4 .	0	0	0	0	39			Initial Bse:	œ (. 31		7		7	ιΩ	65	9 '
Added Vol:	0 0	419	0 0	0 6	0 0	205	0 0	478 343	n (Added Vol:	0 828	o c	0 1113			00	0 0	0 0	0 0
Taitial Fut.		7 7				20.5		8		Tritial Fut.	α α	۲,	::	·	οα	·	Ľ	ס מ	2 4
User Adi:	1.0	1.00	1.0	1.0	1.00		-	H	1.0	User Adj:	-	1.00		4	1.0	۲.	Ή.		1.00
PHF Adj:	-	1.00			1.00		1			PHF Adj:		1.00	1.00 1.00		~			00.	1.00
PHF Volume:	53 0	464	0		0	205		9		PHF Volume:	82	31	111	7		N	S	29	26
Reduct Vol:		0			0	0		,		Reduct Vol:		0						0	0
Reduced Vol:	53 0	464			۰ .		•			Reduced Vol:	8 828	31	26 1113		œ ç		20		26
PCE Adj:	1.00 1.00	00.1	1.00 1.00	00.1	00.1	00.1	1.00	00.1.00	00.1	M.B. Adj:	1.00 1.00	00.4	1.00 1.00	20.1	1.00 1.00	00.1	1.00	00.1	90.1
Final Vol.:	53 0	464	4		0		4	1		Final Vol.:		33	-		4			62	59
				1 1 1 1 1 1 1												1 1 1 1 1			
Saturation Flow Module	low Module:									c	Flow Module:								
Sat/Lane:	1900 1900	1900	1900 1900	1900	1900		1900 19	900 1900	1900	Sat/Lane:	1900 1900	1900	1900 1900	1900	1900 1900	0 1900	1900	1900	1900
Lanes:	1.00 0.00	1.00			00.0		, ,		, 0	Lanes:		0.07					0.61		0.68
Final Sat.:	1805 0	1615	0 0		0		7			Final Sat.:	33 3593	136					1089		1212
	Lucia Modul				:	:	<u>:</u>		!	niny and winderer	lysis Module			1		!			-
Vol/Sat:	0.03 0.00	0.29	0.00 0.00	00.00	0.00.0	.07	0.07 0.	.38 0.19	00.00	Vol/Sat:		0.24	0.32 0.32	0.32	0.01 0.01	1 0.02	0.05	0.05	0.05
Crit Moves:		:					:	*		Crit Moves:		* * *	***		* * * *				
Green/Cycle:	0.34	0.34	0.00 0.00		00.0		0			Green/Cycle:	0.21	0.21							0.20
Volume/Cap:	00.0 60.0	0.83	0.00 00.00	0	0.00	0.34 0.	0.34 0.	.83 0.29	o.	Volume/Cap:	1.18 1.18	1.18	1.18 1.18	1.18	0.04 0.04	4 0.09	0.24	0.24	0.24
Level Of Serv	Service Module	-	-			1 1 1 1 1	<u>;</u> = :	! !		Level Of Service Module	vice Module		: : : : : : : :	- ! ! !			<u> </u>	1	:
Delay/Veh:	14.3 0.0		0.0 0.0		0.0		7			Delay/Veh: 1	123.4	_		_			21.8		21.8
User DelAdj: 1.00 1.00	1.00 1.00	1.00	~	-	1.00			-	-	User DelAdj:	1.00 1		-				1.00		1.00
AdjDel/Veh:	14.3 0.0	26.8	0.0	0.0	0.0 22.3		22.3 20	0.7	0.0	Adjbel/Ven: 123.4		123 123.4 1	118.0 118	118.0	20.8 20.8	21.1	21.8	21.8	21.8
	*******	****	********	*****	*****	****	******	* * * * * * *	*****	********	*	**********	*	****	******	*****	******	* * * *	* * * * *

C-AM. CMD		Tue	Tue Nov 5, 1996 13:07:09	96 13:	60:00			Page	12-1	C-AM.CMD		ľ	rue Nov 5,	1996 1	13:07:09			Page 1	13-1
	Maxim	FISCO/	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	m Rail Hour	EIS/EIR Alterna	tive					ž.	FISC faximum N	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	t Vision 200 /Minimum Rai AM Peak Hour	2000 EIS/EIR Rail Alternative Gour	R ative	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	! ! ! !	; ; ; ;
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #9 7th/New Middle Harbor	ration	Level Of Service Computation Report perations Method (Future Volume Alt ************************************	Computa Future	tion Rep Volume	Altern	native)	* *		Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1994 HCM	Level Of Coperation	Level Of Service Operations Method	G Futu	Service Computation Report S Method (Future Volume Alternative)	port Alterna	ative)		! ## : ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !
Cycle (sec): Loss Time (sec): Optimal Cycle:	: sec): 8 le: 67	10 8 (Y+R = 17	100 Critical Vol./Cap. (X):): 8 (Y+R = 4 sec) Average Delay (sec/veh) 67 Level Of Service:	ritica verage evel O	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	ap. (X sec/ve e:	c): :h):	0.0	0.810 20.7 C	Cycle (sec): Loss Time (sec): Optimal Cycle:	: (sec): :1e:	100 10 (Y+R 70	= 4 sec)	Criti Avera Level	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	Cap. (X) (sec/vel	h):	0.547 17.1	ر 1 1
Approach: Movement:		nd R	South Bound	und - R	East	East Bound		West Bound	Bound - R	Approach: Movement:		North Bound	South L -	South Bound		East Bound L - T - R	K	********* West Bound	und R
Control: Rights: Min. Green:	otect Inclu	le 20	Protected Include	1	ı	de de	-	Protected Include	otected Include 20 0	Control: Rights: Min. Green:	1 PY	Protected Include		cted lude 0	1	Protected Include	20 1	Protected Include	ed de 20
Lanes:	-	= =	0 0 0 -	0 0	0	1 1	٠-۱۱-۰	0 5	0 0	Lanes:	2 0	0 1 0	1	0 1 0		1 1 1		0 1	1 0
Volume Module: Base Vol:	le: 0	0	0	0	0	0	0	0	0	Volume Module: Base Vol:	0	33 0	16	28 4	47 48 3	394 438	38	0 300	
Growth Adj: Initial Bse:	1.00 1.00		1.00 1.00	1.00	1.00 1.00	н		808	00.1	Growth Adj: Initial Bse:	1.00 1	-	1.00	1.00 1.00 28 47	1.00	H	-	0 1.00	1.00
PasserByVol:	00	0 0		00		0 70				Added Vol: PasserByVol:	462				00			0 0	00
Initial Fut: User Adj:	1.00 1.00	502	1.00 1.00	1.00	0 517 1.00 1.00		1.00 1.	526 628 1.00 1.00	1.00	Initial Fut: User Adj:	1.00 1	33 102 .00 1.00	16	28 47 1.00 1.00	1.00	394 924 1.00 1.00	24 117	7 300	1.00
PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00 0 517		1.00 1.	1.00 1.00 526 628	0 1.00 8 0	PHF Adj: PHF Volume:	1.00 1.	33 102	1.00		1.00			0,1.00	1.00
Reduct Vol:	00	0 6	00	o e	0 0	0 0	00	0 0	0 0	Reduct Vol:	0 0		0 1		0				. 0
PCE Adj:			1.00 1.00	1.00				000		reduced vol PCE Adj:	1.00		1.00		1.00			7 300 0 1.00	1.00
: 01.:	00.1	1.00 502	0 1.00	0.1	1.00 1.05 0 543		1.05 1.	00 1.05 26 659	00.1	MLF Adj: Final Vol.:	1.03 1.00 303 33	00 1.00 33 102	1.00	1.00 1.00 28 47	1.00	1.00 1.05 394 970	35 1.00 70 117	0 1.05	1.05
Saturation Flow Module	-	=		:		-	<u>:</u> :			Saturation				1 1 1 1 1			<u>:</u> =		
Sat/Lane:		1900	1900 1900	1900	1900 1900		13	00 10			1900		1900		1900				1900
Lanes:	1.00 0.00		0.00 0.00	00.00				0 0	0.0	Adjustment: Lanes:	2.00 0		1.00		1.00				1.00
Final Sac.:	1900 0	1615	0 0	0	0 3800	00	0 18	05 3800	0 0	Final Sat.:	3610	413 1278	1805	645 1084	1805	1900 3230	1805	5 3694	106
Capacity And Vol/Sat:	alysis Module 0.00 0.00	.31	0.00 0.00	00.00	0.00 0.14		0.00	.29 0.17	00.0 2	Capacity Analysis Vol/Sat: 0.08		Module: 0.08 0.08	0.01 0.	0.04 0.04	0.03	0.21 0.30	0.06	60.09	0.09
Green/Cycle: 0.00 0.00 Volume/Cap: 0.00 0.00		0.37	0.00 0.00	0.00	0.00 0.20 0.00 0.71		0.00.0	35 0.55 84 0.32	0.00	Green/Cycle Volume/Cap:		22 0.22 36 0.36	0.11	0.20 0.20	0.19 0	0.47 0.47	. 0 0	0 0.38	0.38
		-	:					6 6 1		1 6 7 6 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7						;	=		
Delay/Veh:	m	25.5	0.0 0.0	0.0	0.0 26.3		26	H. 5	•	Level Of Service Module Delay/Veh: 28.7 21.6	rvice Modul	**	25.8		21.8			0 13.6	13.6
AdjDel/Veh: 0.0 0.0			0.0 0.0	0.0	0.0 26.3	-1	0.0 26	.1 8.0	0.00	User DelAdj AdjDel/veh:	: 1.00 1.00 28.7 21.6	00 1.00 .6 21.6	1.00 1.00 25.8 21.7	00 1.00	1.00	1.00 1.00 11.6 13.5	5 33.0	0 1.00	1.00
Queue:	0 0	14	0 0	0	0 15	15	**	15 10	0 0	Queue:	8	1 2	0		1 1	7 2	21	3 6	0 *

C-AM.CMD		T Ge	Tue Nov 5, 19	1996 13:07:0	07:09			Page	14-1	C-AM, CMD		Tue Nov 5		1996 13:07:09			Page	15-1	;
	Maxim	FISCO/	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	on 2000 um Rail		EIS/EIR Alternative					FI	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour	t Vision 200 /Minimum Rai AM Peak Hour		EIS/EIR Alternative		·		ļ
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp	Level Of Service 1994 HCM Operations Method #13 Adeline St./ 5th St./	vel Of rations	Level Of Service Computation Report perations Method (Puture Volume Alt	Computa (Future +++++	tion R Volum	Computation Report (Future Volume Alternative	rnative			intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	1 Of Service cions Method	ce Comp	ervice Computation Report Method (Future Volume Altern ************************************	eport e Alter	native)	* *	* * *	* *
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 82	100 2C): 12	(Y+R =	4 sec) 7	Critical Vol./Cap. Average Delay (sec. Level Of Service:	al vol. Delay Serv	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): 'veh):	0 21	0,789 28.2 D	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 c): 11 (Y+R : 71	7. H **	ົວ	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	/Cap. (; (sec/v)	(X): veh):	0 *	0.137 17.0 C C	
Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R R	North Bound	nd R	South Bound	ound - R	L Ea	East Bound	a K	West Bound	Bound . R	Approach: Movement:			South Bound	R L	East Bound	-	West Bound	Bound - R	
Control:	Protected	p	Protected	red ted	Spl	Split Phase		Split Phase	it Phase	Control:	Protected Include	Pro	Protected Include	 Spli	Split Phase Include	<u>-</u>	Split Phase Include	it Phase Include	-
Kights: Min. Green: Lanes:	10 20 1 0 1 1	0 0	10 20	1 0	10		0.0 '	10 20	1 1	Min. Green: Lanes:		20 0	20	20 10 0 0 1	20	0 50	10 20 1 0 1		0 70
Volume Module		-	;			:	<u>:</u> '	:	:	Volume Module:			7.7	31 24	4		305	71.	r
Base Vol: Growth Adj:	1.00		-	-			1.00	-	-	Growth Adj: 1	1.00 1.	1.00		1.00			٦.	-) O 1
Initial Bse: Added Vol:	0 0 92 163	0 573	72 109 0 233	165	256	0	171	710 0	364	Added Vol:	100		, 0		, o		1		90
PasserByVol:	0 0	0 22	0 0	0 2 2 2	0 25,6	٥.	0 121	,	0 0	PasserByVol: Initial Fut:	0 0 0 0	0 0	0	31 24	0 F	13	0 0 297 31	11	0 ស្
User Adj:	1.00				1.00	1.00	1.00			User Adj:	1.00	1.00		1.00 1.00 1	1.00 1	1.00	1.00 1.00		2 9
PHF Adj: PHF Volume:	1.00 1.00 92 163	1.00	1.00 1.00 72 342	165	256	51	171	710 169	18	PHF Volume:	175	0			•				, ν
Reduct Vol:	0 0	0 573	0 0 72 342	165	256	21	0	0 0 710 169	0 0	Reduct Vol: Reduced Vol:	0 0 0 0 175 216	0 0 91	0 154	0 0 31 24	43	13 0	m	0 0 1 115	o rvi
PCE Adj:			1.00 1.00		1.00	1.00	1.00			PCE Adj:	1.00	1.00	1.00 1.	1.00 1.00 1	1.00 1	1.00 1	1.00 1.00	0 1.00	0 9
MLF Adj: Final Vol.:	1.00 1.00 92 163	573	1.00 1.05 72 359	1.05	1.05	1.00 1	1.00 1	710 177	5 1.05 7 191	MLF Adj: Final Vol.:	193	0.1		25		_	297 3		-
Saturation Flow Module:	low Module:	=	1					1 1 1 1 1 1	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	Saturation Flow Module:		<u>:</u>	!	-	!	_		;	<u>-</u>
Sat/Lane:		1900	1900 1900	1900	1900	1900 1	1900 1	1900 1900	0 1900 2 0.92	Sat/Lane: 1 Adjustment: 1	1900 1900 1900 1.00 0.92 0.92	1900	1900 19 0.97 0.	1900 1900 1 0.97 0.96 (1900 1 0.96 0	1900 1900 0.95 1.00		ខ្លួ
Lanes: Final Sat.:	1.00		1.00 1.35 1805 2436		1.66	0.34 1 568 1	1.00 1			Lanes: Final Sat.:	0.00 1.34 1.66 0 2348 2896	00.00	1.66 0. 3062 6	0.34 0.60 1 624 1086 1	1.07 0	0.33 1 608 1	1.00 1.00 1805 1900	0 1.00 0 1615	ر د ا
Capacity Analysis Module: Vol/Sat: 0.05 0.09 0		.35	0.04 0.15	0.15	0.09	0.09	0.10	0.39 0.11	1 0.11	Capacity Analy Vol/Sat:	.ysis Module: 0.00 0.08 0.08	00.0	0.05 0.	0.05 0.02	0.02 0	0.02 0	0.16 0.02	2 0.07	
<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.10 0.20 0.51 0.43	0.58	00	0.20	0.20	0.20	0.20 0.51	0.38 0.38 1.04 0.28	8 0.38 8 0.28		0.00 0.23 0.23 0.00 0.36 0.36	0.00	0.23 0.	0.23 0.20 G	0.20 0	0.20 0	0.46 0.46 0.36 0.04	6 0.46	ð 2: -
Level Of Serv Delay/Veh: User DelAdj: AdjDel/Veh: Queue:	ice Module: 29.5 22.7 1.00 1.00 29.5 22.7	9.5	28.0 27.0 1.00 1.00 28.0 27.0	27.0 1.00 27.0	22.9 1.00 22.9	22.9 1.00 22.9	23.4 5 1.00 1 23.4 5	56.1 13.9 1.00 1.00 56.1 13.9	9 13.9 0 1.00 9 13.9 3 4	of Serv Veh: elAdj: /Veh:	ice Module: 0.0 21.0 21.0 1.00 1.00 1.00 0.0 21.0 21.0	1.00	20.3 20 1.00 1. 20.3 20	20.3 21.2 2 1.00 1.00 1 20.3 21.2 2	21.2 2.1.2 2.2.2 21.2 2.1.2 2.1.2	21.2 1 1.00 1 21.2 1	11.4 9.6 11.00 1.00 11.4 9.6	6 10.1 0 1.00 6 10.1	1017
************************	********	******	******************	****	* * * * * *	*	****	* * * * * * *	******	*****		********	******	******	***	* * * * *	* * * * * * *	* * * * *	÷

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C-AM.CMD		Tue	Tue Nov 5,		1996 13:07:09	60:			Page	16-1	C-AM.CMD		H	Tue Nov	5, 1996	13:07	60:		Δ.	Page 17	7
	Maxim	FISCO/	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour	t Vision 200 /Minimum Rai AM Peak Hour	2000 EI Rail Al	EIS/EIR Alternat	tive					Мах	FISC	ISCO/Port m Marine/P	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail AM Peak Hour		EIS/EIR Alternative	, ve	1 t 1 1 1	 	t ! ! !
Level Of Service Computation Report 1994 MCM Operations Method (Future Volume Alternativ Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alterion) intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.	Level Of Sperations St./ I-880	Servic	Service Computation Report Method (Future Volume Ait NB Ramps / Frontage Rd.	Computation Report (Future Volume Allerinative is / Frontage Rd.	on Rep.	A 1 t e e e e e e e e e e e e e e e e e e	, t			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alterna Intersection #16 7th St./ I-880 SB Ramps	HCM	Level Of Service Operations Method	el Of Serv ations Met	rice Cor hod (Fur************************************	mputati uture V	Level Of Service Computation Report Operations Method (Future Volume Alternative)	rt ternat +****	ive)	;	1
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 10	00 10 (Y+R = 70	4 Sec	Critical Vol./Cap. (X): sec) Average Delay (sec/veh) Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	Vol./Cap Delay (se Service:	ap. (X sec/ve) : (c	0.605 22.8 C	.605 22.8 C	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 iec): 5 e: 35	00 5 (Y+R 35	# H	Sec) Ave	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. Average Delay (sec. Level Of Service:	Cap. (X): (sec/veh)	* * *	0.331 1.4 1.4	*
Approach: Movement:	North Bound L - T -	nd R	South L -	South Bound	~	East Bound L - T -	East Bound	Z L	West Bound	Bound T - R	Approach: Movement:	North Bound L T T	Bound T - R	sou L	South Bound	~	East Bound	sound - R	L We	**************************************	nd R
Control:	 Protected Taclude		Prot	Protected Ov1	<u>:</u> :	Protect	Protected Toolude	-	Protected Thelude	:ted	Control:	 Protected Tnclude	ted	 Pr	Protected The lude	<u>-</u>	Protected	ted	 Pr	Protected Trolude	
Min. Green: Lanes:	10 20	20	100	0	20 1	100		20	0 20	1 0	Min. Green: Lanes:	000	0	00	0	° 0	0 20	20	10	20	20
Volume Module		=			=		1 1 1		1	:	Volume Module	 e:	!	=		<u>-</u>				1	
Base Vol:	0 548					0 6	•	0 9	0 62		Base Vol:	0 8	•		0 8	0 9		,	65	0 ;	0
Growth Adj: Initial Bse:	1.00 1.00 0 548	1.00	1.00 1.	1.00 1.		÷	-	00.	-	n · 1	Growin Adj: Initial Bse:	0 0	1.00	1 . 00 0		1.00.1	-	-	1.00	00.1	1.00
Added Vol:	575 0	0 0	0 0	0 0	436 3	383	m c	0 0	0 12	00	Added Vol:	00	0 0	0 0	00	0 0	0 386	478	0 0	1022	0 0
Initial Fut:	5	21	17						_		Initial Fut:	0		0	0	0	38		65	1022	0
User Adj:	1.00 1.00	1.00	1.00 1.	1.00 1.	1.00 1.	1.00 1.00	00 1.00	4 -	00 1.00	1.00	User Adj:	1.00 1.00	1.00	1.00	1.00	1.00 1	00 1.00	1.00	1.00		1.00
PHF Volume:	548	21				383 1		4	1		PHF Volume:	1	1			4			65		0.1
Reduct Vol:	0 1	۰ ;	0 !	0 0	0 0	0 0	0 9	0 0	90	۰,	Reduct Vol:	00	0 0	0 0	0 0	0 0	0			٥	0
reduced vol: PCE Adj:	1.00 1.00	1.00	1.00 1.00					Ä	H		PCE Adj:	٥.	1.00	1.00		1.00 1	.00 1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00 1.			ä	05 1.00	-	.00 1.05		MLF Adj:	1.00 1.00	1.00	1.00		7			1.03		1.00
Final Vol.:	592 548	21	17	9 1	598 3	383 2	20		0 77		Final Vol.:	0	0	0	0	0	0 405	478	67	1073	0 1
Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 0.95 0.99		1900			_			- 44		7 7	Saturation Fl Sat/Lane: Adjustment:			1900		=		1900	1900	1900	1900
Lanes: Final Sat.:	2.00 0.96 3610 1812 '	69	1.00 0. 1805	0.00 2.	2.00 1. 3230 18	1.00 2.00 1805 3800	00.00	۰ -	.00 1.97 0 3751	0.03	Lanes: Final Sat.:	0.00 00.0	0.0	00.0	00.0	00.0	00 2.00	1.00	3610	3800	0.00
	lysis Module	0.30	1	0.00.0	0.19 0.	0.21 0.01	01 0.00	- °	.00 0.02	0.02	Capacity Analysis Module	lysis Modu]	le: 0.00	00.0	0.00	0 00.0	0.00		1	0.28	00.00
es: cle: ap:	**** 0.25 0.35 0.65 0.86	0.35	0.10 0. 0.09 0.	0.00 0.	** 0.45 0. 0.41 0.	0.25 0.45 0.86 0.01	00	00	.00 0.20	0.20	Crit Moves: Green/Cycle: Volume/Cap:	0.00 0.00	0.00	00.0	0.00.0	0.00.0	0.00 0.85 0.00 0.13	0.85	0.10 0.19	0.95 0	00.00
. <u> </u>	vice Module: 22.7 27.1 1.00 1.00	1.1				-	0 ; 0	- "	0.0 21.1	24.0	Level Of Service Module Delay/Veh: 0.0 0.0 User DelAdj: 1.00 1.00	vice Module 0.0 0.0 1.00 1.00	e: 0.0 1.00	0.0	0.0	_		-	26.7	t t	0.0
Adjuet/ven: Queue: **********************************	AddJugi/ven:	7.7	0 4.47		111	12	:		0 2 2	7777	Ad) Del/ ven: Queue: **********************************	0 * * * * * * * * * * * *	*	*	*		0 0.8	1.1	26.7	0.1	0

Section Comparison Section S	Secretary Column Alternative 1994 REV Operation Method (Pollura Volumn Alternative) 1.0		FISCO Maximum Ma	/Port Vision 2001 rine/Minimum Rail AM Peak Hour	0 EIS/EIR 1 Alternative			FISC Maximum M	:O/Port Vision 2 arine/Minimum R AM Peak Ho		4.		
10	10 Norme Case Level Of Service: 10 Cycle (seed): 110 C	1994	Level O HCM Unsignali:	f Service Compute zed Method (Futur	ation Report re Volume Alterna	tive)	******	Level 1994 HCM Operati	Of Service Compons Method (Fut	utation Report ure Volume Alte	rnative	*	*
100	Secure Case Lawel Of Service: Cycle (sec.): 11 (Tyte Actec) Accessed Daily (sec/vth): Cycle (sec.): 11 (Tyte Actec) Accessed Daily (sec./vth): Cycle (sec.): 11 (Tyte Actec) Accessed Daily (sec./vth): Cycle (sec.): 11 (Tyte Actec) Accessed Daily (sec./vth): Cycle (sec.): 11 (Tyte Actec) Accessed Daily (sec./vth): Cycle (sec.): 11 (Tyte Actec) Accessed Daily (sec./vth): Cycle (sec.): 11 (Tyte Actec) Accessed Daily (sec./vth): Cycle (sec./	Intersection #1	7 14th St. / I-	880 Frontage Rd.			Intersection	#18 W.Grand Ave	./ I-880 Fronta	ge Rd.	***	****	•
		Average Delay (£	sec/veh):	3.9 WC	orst Case Level O	E Service: D	Cycle (sec):	100	Crit	ical Vol./Cap.	(X):	0.54	4.
	10	Approach:	North Bound	South Bound	East Bound	West Bound	Optimal Cycle	30/; 11 (1+R) 3: 81	Leve	age beray (sec/	: (1100	. 12	, U
Decentrollide Step Sign	Uncontrolled Stop Sign Stop Sign Notice 1 0 2 0 0 0 0 0 0 1 1 0 2 0 0 0 0 0 0 1 1 0 2 0 0 0 0 0 0 0 0 1 1 0 2 0 0 0 0 0 0 0 0 0 1 0 0 2 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 3 0 436 0 0 0 0 0 0 0 0 0 0 3 0 436 0 0 0 0 0 0 0 0 0 3 0 436 0 0 0 0 0 0 0 0 0 3 0 436 0 0 0 0 0 0 0 0 0 3 0 436 0 0 0 0 0 0 0 0 4 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 5 0 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 0 5 0 0 0 5 0 0 0 5 0 0 0 5 0 0 0 5 0 0 0 5 0 0 0 5 0 0 5 0 0 0 5 0 0 5 0 0 0 5 0 0 0 5 0 0	<u>:</u>	a - T -	٠ ١	- -		Approach:	North Bound	**************************************	East Bou	 ind	West Bo	ound
1	Include Include Include C	-	Uncontrolled	Uncontrolled	Stop Sign	Stop Sign	Movement:	Ľ	' [-	י בו		1	8
			Include	Include	Include	Include	Control	Split Phase	Split Phase	<u> </u>		Drotect	
10.0 1.00 1.00 1.00 1.00 0 0 0 0 0 0 0 0 0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00					,	Rights:	Include	Include		<u> </u>	Inclu	ıde
1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Volume Module:		,		,	Min. Green:	50	10 20	0 10 20	00	0 20	20
100 100	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				0 6	1 00 1 00 1	panes:	7 7	T 0 T	7 0 7	- 1	7	7 7
10 10 10 10 10 10 10 10	0 436 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				00.1 00.1	140 0.00	Volume Module				_		
100 100 1.	1.00 1.00 1.00 1.00 1.00 1.00 1.00 6 In 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Added Vol:	383	436	. 0	0	Base Vol:	0	678		12		449
1.00 1.00 1.00 1.00 1.00 1.00 0 6 Maded Vol. 0 279 0 0 0 0 0 0 0 0 0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PasserByVol:	0	0	0	0	Growth Adj:		1.00 1.00	1.00 1.00		.00 1.00	1
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			436	0	0	Initial Bse:			9			449
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1.00	1.00	1.00 1.00	1.00 1.00	Added Vol:	271 1	0	0		7	0
10 10 10 10 10 10 10 10	30 436 0 0 0 140 0 6 141 01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1.00	1.00	1.00 1.00	1.00 1.00 1	PasserByVol:		0 (, ٥			0 ;
10 10 10 10 10 10 10 10	04 0 0 0 140 0 6 PH 04	PHF Volume:	383	436	0 0	0 0	Initial Fut:	271	1 00 1 00	1 00 1 00		137 269	
Secretary Secr	0	Reduct Vol:	o 6	0 4	- c	, ,	DHF Adi	00.1	1.00 1.00	1.00 1.00			
Nedweet Vol. 0.0	National Color	Adingted Volume					PHF Volume:	271	678 347	65 336			449
1.00 1.00	NOTE NOTE	Grade:	*0	\$ 0	*0	*0	Reduct Vol:	0	0	0			0
Name	1.10 1.00 1.10 1.10 1.10 1.10 ML	e/Cars:		XXXX XXXX	XXXX XXXX		Reduced Vol:	271	678 347	65		137 269	
1.10 1.00 1.00 1.10	1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10	* Truck/Comb:	xxxx xxxx	XXXX XXXX	XXXX		PCE Adj:	1.00	1.00 1.00	1.00			
XXXX XXXX XXXX XXXX XXXX XXXX XXXX X	XXXX	PCE Adj: 1.1	10 1.00 1.00	1.10 1.00 1.00		10 1.10	MLF Adj:		1.05 1.00	1.00			_
33 436	33 436		xxxx xxxx	XXXX XXXX			Final Vol.:	9 285	712	ហ	=		494
31 436 0	2.1 xxxx xxxxx xxxxx xxxxx		χ,	XXXX XX	XXXX	ž						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
2.1 xxxx xxxxx xxxxx xxxxx xxxx xxxx xxx	2.1 xxxx xxxxx xxxx xxxx	Adj Vol.:	£ 93	436	>		Saturation Fi		0001	0001			1 900
5.5 XXXX XXXXX XXXXX XXXXX XXXX XXXX XX	5.5 XXXX XXXXX XXXX XXXXX 7.0 XXXX 5.5 In a construction of the co	Monoth Time www	dule:	2 1 2222 2222	***** ****	****		96 0	0 95 1 00	0 95 0 99			600
		Critical Gn. vvvv	XXXXX XXXX	5.5 xxxx xxxxx	XXXXX XXXX	XXXX		1.41	2.00 0.98	1.00 1.93			1.88
472 XXXX XXXXX XXXXX XXXXX XXXX 236 Capacity Analysis Module: 956 XXXX XXXXX XXXXX XXXX 284 XXXX 1051 Vol/Sat: 1.00 XXXX XXXX XXXX XXXX XXXX 1051 Vol/Sat: 1.00 XXXX XXXX XXXX XXXX XXXX 1.00 Crit Moves: 956 XXXX XXXX XXXX XXXX 1.00 Crit Moves: 1.00 XXXX XXXX XXXX XXXX 1.00 Crit Moves: 956 XXXX XXXX XXXX XXXX 1.00 Crit Moves: 956 XXXX XXXX XXXX XXXX XXXX 1.00 Crit Moves: 957 XXX XXXX XXXX XXXX XXXX XXXX XXXX XX	472 XXXX XXXXX XXXXX 893 XXXX 236 Ca 956 XXXX XXXXX XXXXX 284 XXXX 1051 VO 956 XXXX XXXXX XXXX XXXX 20.97 XXXX 10.00 Gr 956 XXXX XXXXX XXXX XXXX 20.97 XXXX 10.00 Gr 956 XXXX XXXX XXXX XXXX XXXX 26.6 XXXX 3.4 Le A LT - LTR - RT LT - LTR - RT LT - LTR - RT US XXXX XXXX XXXX XXXX XXXX XXXX XXXX					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Final Sat.:	2580	3610 1868	1805 3628			3244
472 xxxx xxxx xxxx xxxx xxxx 1236 Capacity Analysis Module: 956 xxxx xxxx xxxx xxxx xxxx 1051 Vol/Sat: 0.00 0.11 0.11 0.20 0.19 0.19 0.19 0.00 0.10 0.00 0.15 1.00 xxxx xxxx xxxx xxxx xxxx xxxx 1.00 Crit Moves: 1.00 Crit Moves	472 XXXX XXXXX XXXX XXXXX 893 XXXX 236 Ca 956 XXXX XXXXX XXXX XXXX 1001 1.00 XXXX XXXXX XXXX XXXX 0.97 XXXX 100 956 XXXX XXXX XXXX XXXX XXXX 1.00	Capacity Module:	••								<u>-</u>		
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C-PM.CMD	Tue Nov 5, 1996	1996 12:31:57			Page 1	Table	Table J.7-8							
	FISCO/Port Vision 2000 EIS/EIR	000 EIS/EIR				;	C-PM.CMD	Tue Nov	v S, 1996 12:31:57	31:57			Page 1	1-2
	Maximum Marine/Minimum Rail PM Peak Hour	ail Alternative	ive		1	1		FISCO/Port Vision 2000 Maximum Marine/Minimum Rail DM Deak Hour	FISCO/Port Vision 2000 EIS/EIR um Marine/Minimum Rail Alterna DM Deak Hour	EIS/EIR Alternative	ive	1 1 1 1) 	! ! !
	Trip Generation Report Forecast for PM Peak Hour	Report Peak Hour					Zone # Subzone	Amount Units	Rate	Rate	Trips	Trips Out	Total Trips	* Of Total
Zone # Subzone	Ra Amount Units I	Rate Rate In Out	Trips Trips In Out	Trips Out	Total Trips	% Of Total	Zone	, 7			! 9	228	418	7.3
1 New Harbor	1135.00 Employees	0.06 0.22	8 8 9	250	318	5.6	27 7th St Harbr Zone 27	st Harbr 1.00 Truck External Zone 27 Subtotal	cternal 226.00	0 271.00	226	271 271	497	8.7
3 J.I.T. Zone 3 S	208.00 Employees Subtotal	0.10 0.36	21	75 75	96	1.7	28 Outer Harbor Zone 28	Harbor 1.00 Truck External Zone 28 Subtotal	cternal 261.00	0 312.00	261	312	573 573	10.0
4 SP Rail Term Zone 4 S	210.00 Employees	0.10 0.36	21	76 76	97 97	1.7	TOTAL			1 .	. 2342	3364	5706 100.0	100.0
6 Middle Harbr Zone 6 S	516.00 Employees Subtotal	0.06 0.22	31	114	145 145	2.5								
7 7th St Harbr Zone 7 S	613.00 Employees Subtotal	0.06 0.22	37	135	172	3.0								
8 Outer Harbor Zone 8 S	706.00 Employees	0.06 0.21	4 4 2 5	148 148	190									
10 New Park Zone 10	ark 1.00 Total Trips 30 Zone 10 Subtotal	30.00 59.00	30	59	8 6 8	1.6						-	_	
11 New Harbor Zone 11	1.00 Trucks Inter Subtotal	246.00 295.00	246 246	295 295	541 541	9.5 5.5								
16 Middle Harbr Zone 16	1.00 Trucks Inter Subtotal	112.00 134.00	112	134	246 246	4.4 .3								
17 7th St Harbr Zone 17	t Harbr 1.00 Trucks Inter 133 Zone 17 Subtotal	133.00 159.00	133	159	292 292	5.1 5.1								
18 Outer Harbor Zone 18	Harbor 1.00 Trucks Inter 15: Zone 18 Subtotal	153.00 184.00	153 153	184	337	e. 8								
21 New Harbor Zone 21	1.00 Truck External 418.00 501.00 Subtotal	8.00 501.00	418	501	919 919	16.1 16.1								
23 J.I.T. Zone 23	1.00 Truck External 175.00 210.00 Subtotal	5.00 210.00	175 175	210	385 385	6.7								
24 SP Rail Term Zone 24	il Term 1.00 Truck External 178.00 213.00 Zone 24 Subtotal	8.00 213.00	178	213	391	6.9								
26 Middle Harbr	1.00 Truck External 190.00 228.00	0.00 228.00	190	228	418	7.3								
Traffix 6.8.0306	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc.,	Licensed to	Dowling	Assoc.	, Oakland	nd -	g	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	g Assoc. Lice	nsed to D] Jowling	Assoc.	, Oakla	п

FISCO/Port Vision Maximum Marine/Minimum

C-PM.CMD

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The Distribution Report To date: 10 Oliume Northbound Southbound Southbound Southbound Fact Thru Right Left	cimum Marine/Minimum Rail PM Peak Hour		EIS/EIR Alternative	. .				2	FI laximum	SCO/Por Marine	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alterna PM Peak Hour	n 2000 m Rail Hour	EIS/1 Alte1	EIS/EIR Alternative				
To are continued Southbound Southbound Southbound Southbound Southbound Southbound Type Left Thru Right Left Thru Righ	Trip Distribution	Report	: : :	; ; ;	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Turni	ng Move PM Peak	ment R Hour	eport	• • • • •	 	1 1 1 1	! !	! !
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			Maxim	FISCO/ um Mar	/Port ine/M	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	Rail Hour	EIS/1	EIR			! ! !	! ! !	1 1 1 2 1 4	1 	! ! ! !	Maxim	risco/	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	t Vision 200 /Minimum Rai PM Peak Hour	2000 E Rail A Hour	EIS/EIR Alterna	tive	 	1 1 1 1	:	!
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			Maxi	FISC imum M	0/Por arine,	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	on 200 um Rai c Hour	DO EIS	/EIR ernati	ive					1 1 1 6 1	1 	! !	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	ISCO/	Port \ine/Mi	FISCO/Port Vision 2000 EIS/EIR um Marine/Minimum Rail Alterna PM Peak Hour		EIS/EJ Altern	EIS/EIR Alternative	! ! !			!
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Volume Type	i i	NB Link Out To	ink Total	e e	SB Link Out To	ink Total	E	EB Link Out To	ink Total	ដ	WB Link Out Tot	E E	Total Volume	Impact Analysis Report Level Of Service	
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Total	99	0	99	0	98	86	0	0	0	31	0	31	195	# 4 Maritime St./ 14th St. C 15.9 0.392 C 19.5 0.774 + 3.5	3.579 D/V
#214 Base		-350	-350	0	0	0		-391	-391	-741		-741	-1482	# 5 Maritime St./ 7th St. Extensio B 5.8 0.080 B 12.7 0.473 + 6.8	6.898 D/V
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#217														# 7 Middle Harbor/New Mddl Hrbr Rd B 13.5 0.296 C 21.3 0.830 + 7.6	7.841 D/V
. Base Added	• •	-19	-19	13	00	-19 13	60	00	-47	00	-47	60	-132	# 8 Adeline St./ 3rd St. C 20.4 0.084 F 91.7 0.693 +71.346	1.346 D/V
Total	0	9	9	9	0	٥	13	5	13	э	13	7	^	# 9 7th/New Middle Harbor 0.0 0.000 C 20.7 0.765 +20.722	0.722 D/V
#218 Base	-39	0	-39	0	-70	-70	-47	0	-47	0	-16	-16	-172	# 12 Maritime St./ W.Grand Ave./ I- B 12.4 0.237 C 18.9 0.429 + 6.5	V/G 975.5
Added Total	31	00	31	00	2 2	75 S	13	00	13	00	0 10	910	182	# 13 Adeline St./ 5th St./ I-880 SB C 17.6 0.328 C 22.4 0.656 + 4.8	4.809 D/V
#219	;		ć	•	ć	Ş	•	·	ų	Ų			c u	# 14 Union St./ 5th St./ I-880 Nort B 12.5 0.178 C 15.7 0.199 + 3.2	3.250 D/V
Base	75	0	75	0	75	75		n vs	י ני	n w 1	00	י נטי	158	# 15 7th St./ I-880 NB Ramps / Fron B 11.5 0.135 C 17.6 0.413 + 6.1	6.181 D/V
Total	ហ	0	ω	0	S.	ហ	0	0	P	o o		0	ω	# 16 7th St./ I-880 SB Ramps A 2.6 0.113 B 5.7 0.472 + 3.0	3.064 D/V
#220 Base	0 0	-19	-19	-37	0 0	-37	0 0	-23	-23	יף ע	00	'nα	48. 4. 0.	# 17 14th St./ I-880 Frontage Rd. A 1.9 0.000 D 2.5 0.000 + 0.0	0.000 V/C
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#225 Base	٥	0	0	0	. 1	សុ		-278	-278	-283	0	-283	- 566		
Added	00	00	• •	00	٠ ٥	ω o	00	309	309	314		314	628 62		
#226 Base	0	0	0	-16	0	-16	-375	0	-375	0	-391	-391	-782		
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#244 Base Added	00	00	00		-226 199	-528		•	-609	-37		-81	-1218 2403		
Total	0	0	0	-13	-27	-40	318	275	593	288	345	633	1185		

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C-PM.CMD		Tue Nov		5, 1996 12	12:31:58			Page	6-1	C-PM.CMD		Tue	Tue Nov 5, 1	1996 12:	12:31:58		Page	7-1
	Maximu	rISCO/F	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	t Vision 2000 /Minimum Rai PM Peak Hour	o EIS/EIR 1 Alterna	EIS/EIR Alternative					Maxi	FISCO/Port mum Marine/l	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	on 2000 um Rail c Hour	EIS/EIR Alternative	ve		
Level Of Service 1994 HCM Operations Method ************************************	Level Of Service Computation Report 1994 HCM Operations Method (Puture Volume Alternative ntersection #3 Maritime St./ Burma St.	rel Of cations	Level Of Service Computation Report perations Method (Puture Volume Alt	Comput.	ation F e Volum	Computation Report (Future Volume Alternativ	rnative	* ;	*	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************	1994 HCM Op	Level Of perations *******	Level Of Service (Operations Method	Computa	Computation Report (Future Volume Alternative)	ternativ *******	(e) ************************************	, , , , , , , , , , , , , , , , , , ,
Cycle (sec): 100 Loss Time (sec): 8 (Y+R = 4 sec) Optimal Cycle: 58	100 (cc) : 88 (cc) : 58	(Y+R =	4 sec)	Critical Vol./ sec) Average Delay Level Of Servi	Critical Vol./Cap. Average Delay (sec/ Level Of Service:	/Cap. (X): / (sec/veh)	(X): 'veh):	0.329 9.4 B	329 9.4 B	Cycle (sec): Loss Time (sec) Optimal Cycle:	100 ec): 8	100 8 (Y+R = 60	Critical 4 sec) Average Level Of	Critical Vol./ Average Delay Level Of Servi	Vol./Cap. (Delay (sec/v Service:	Cap. (X): (sec/veh): ce:	0.774 19.5 C	ቆ የህ ርን
Approach: North Bound Movement: L - T - R	North Bound	ld R	South Bound East Bound L - T - R L - T - R	Bound - R	L Ba	East Bound	nd R	West Bound L - T -	ound - R	Approach: Movement:		und - R	South Bound L - T -	ound - R			West Bound L - T -	und - R
Control: Rights:	Protected Include	-	Protected Include	1		1 5 5	=	rote	1	Control: Rights:	. 5 H	•	i g H		Fe.	tted	Per	ted de
Min. Green: Lanes:	10 20	0 50	10 20 1 0 1	1 0	2 	20 0 1	0 70	000	00	Min. Green: Lanes:	10 20	1 0	10 20	1 0	10 20	0 0	10 20	20
Volume Module:			;		=	٠	-			Volume Module	- i	- 0	200	_ c	c c			- 0
Base Vol: Growth Adj: Tritial Bes.	5 590 1.00 1.00 1 5 590	00.	1.00 1.00	1.00	1.00	1.00	1.00	00.1.00.1	00.1	Growth Adj: Initial Bse:	7		-	٥٠٢	1.0	1.0	1.0	1.00
Added Vol:		0		80	15	0	0			Added Vol:		0 0		65	97 0	391	0 0	00
PasserByVol: Initial Fut:	5 984	00	0 0 0	0 0 7 89	157	00	20 0	00	. .	rasserbyvol: Initial Fut:	301 711			9		39		290
User Adj:	1.00 1.00 1	1.00	1.00 1.00	0 1.00	1.00	1.00	1.00	1.00 1.00	1.00	User Adj: PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
PHF Volume:	984					0 0	200	1	1	PHF Volume:								290
Reduct Vol: Reduced Vol:	5 984	00	0 0				20			Reduced Vol:	301 711							290
PCE Adj:	1.00 1.00 1	1.00	1.00 1.00	0 1.00		1.00	1.00	1.00 1.00	1.00	PCE Adj: MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00
Final Vol.:	1033		98 0				205	1	•	Final Vol.:		29		'	' !	'		290
Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 0.95 1.00 Lanes: 1.00 2.00		1900 1000 0000 0000	1900 1900 1.00 0.97 1.00 1.59		_	1900 1.00 0.00	1900 1 0.85 1	190	64.0	Saturation Fl Sat/Lane: Adjustment: Lanes:	OW MC 1900 0.95	=		1.9	190	400	190 1.0	1900 0.85 1.00
Final Sat.:	1805 3800	0	1900 2931	1 755	1805	0	1615	0	0	Final Sat.:	1805 3621	141	1805 3032	654	221 0	890	0 094	1615
-ન ત Σ	lysis Module: 0.00 0.27 0	. 00.0	0.00 0.12	2 0.12	60.0	00.00	0.03	0.00 00.00	0.00	Capacity Analysis Vol/Sat: 0.17 Crit Moves: ****	lysis Module 0.17 0.21	0.21	0.06 0.11	0.11	0.44 0.00	0.44	0.12 0.00	0.18
Green/Cycle: Volume/Cap:	0.24 0.62	0.00	0.00 0.48	8 0,48	0.20	0.00	0.20 (0.15 (0.00 0.00	0.00	Green/Cycle: Volume/Cap:	0.20 0.30 0.84 0.69	0.30	0.10 0.20	0.20	0.52 0.00	0.72	0.52 0.00	0.52
Level Of Service Module Delay/Veh: 18.7 6.5 User DelAdj: 1.00 1.00 AdjDel/Veh: 18.7 6.5 Queue: 0 15		0.00	0.0 0.0 10.0 10.0 23.2 0.0 21.4 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	0 10.0	23.2	0.0	21.4	0.0 0.0 1.00 1.00 0.0 0.0	10.4	Level Of Service Module Delay/Veh: 36.2 21.3 User DelAdj: 1.00 1.00 AdjDel/Veh: 36.2 21.3 Queue: 10 19	vice Module 36.2 21.3 1.00 1.00 36.2 21.3 10 19	: 21.3 1.00 21.3	31.2 23.7 1.00 1.00 31.2 23.7 3 8	23.7	20.7 0.0 1.00 1.00 20.7 0.0	5.5 1.00 5.5 5.5	8.5 0.0 1.00 1.00 8.5 0.0	1.00 1.00 9.1 5.***

C-PM.CMD		Tue Nov 5, 1996 12:31:58	996 12	:31:58			Pa	Page 8-1		C-PM.CMD		r	Tue Nov 5,	1996 12:	12:31:58			Page	9-1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FIS	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	on 2000 um Rail	0 EIS/E	IR				<u> </u>		Ma	FISC Ximum M	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	t Vision 2000 /Minimum Rail PM Peak Hour	EIS/EIR Alternative	tive			
; ; ; ; ; ; ; ; ; ; ;	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternati	Level of Service Computation Report periations Method (Future Volume Alt	Compute	stien K	e Alte	nat ive	-			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	.994 HCM	Level Operati	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alt	Computa (Future	Computation Report (Future Volume Alternative)	ort Alterna	tive)	***	
Intersection	Intersection #5 Maritime St./ 7th St. Extension	./ 7th St. E	xtensic	u C					: :	Intersection #6 7th St./ 7th St. Extension	#6 7th S	t./ 7th	St. Extension	sion	****	* * * *	***	*****	*
Cycle (sec):	100		Critica	Critical Vol./Cap. (X):	/Cap.	: (x)	0	0.473		Cycle (sec):	FI .	100	•	Critical	1 Vol./Cap.	ap. (X):	••	0.699	ο, ,
Loss Time (sec): Optimal Cycle:): 8	• ex	Average Level (ge Delay (se Of Service:	(sec/	veh):		12.7 B		Loss Time (sec)	~ 1	89 (X+X		Average Level (4 sec) Average Delay (sec, Level Of Service:	sec/ven	;	7.67 D	٠,
Approach:	North Bound	South Bound East Bound	ound R	L Eas	East Bound - T	nd R	West	West Bound	&	Approach: Movement:	North Bound	Bound R		3ound	East L -	East Bound - T - R	1	West Bound - T -	und - R
Control	Protected	<u>-</u>	٠.		Protected		Prote	Protected	-	Control:	Protected	cted			 Prot	Protected	<u>-</u>	Protected	
Rights:	Include	OVI	,	-	ر م	2.0	o In	Include	c	Rights: Min Green:	Inc 10 2	Include 20 20	10	ide	In 10	Include 20 2		0v1 0 20	20
Min. Green: Lanes:	2 0 2 0 0	, ,	0	7	0		0	0	, ,	Lanes:	0	-	0 1	1 0		2 1 0	7 :	0	0 1
Volume Module:			!		! ! !	-	† † † †	: : :		Volume Module				-			=		
Base Vol:	36 0						0 0	0 0	0 6	Base Vol:	0 0	0 0	31 18		0 0		-	0 0 0	0 0
Growth Adj: Initial Bse:	1.00 1.00 1.0 36 0	0 1.00 1.00	75	223 0		74.	4	1	2 0	Initial Bse:	00:1		31					0	
Added Vol:	396 47	0 44	7	12	0 (429	0 (0 0	0 0	Added Vol:	191 150	0 56	448 144	285	405 4	498 229	m	9 341	319
PasserByVol:	0 0	0 0 0	191	343	0	203	0	• •	. 0	Initial Fut:	15	Ľ	479 16	28		24	М	34	319
User Adj:	1.001	1.001		1.00			-	-	00	User Adj:	1.00 1.00		1.00	0 1.00				00.1.00	1.00
PHF Adj:	1.00 1.00 1.00	1.001	1.00	1.00	1.00	1.00 1	1.00 1.0	00.1.00.	2 0	PHF Adj:	1.00 1.00	0 1.00	479 162		1.00 1.	1.00 1.00 498 248	0 1.00 8 39	341	319
Reduct Vol:	432 479	0 0				n 0			. 0	Reduct Vol:			. 0						0
Reduced Vol:		0 0 447				503			0	Reduced Vol:	191 150		479		405 4			341	319
PCE Adj:	1.00	00 1.00 1.00	1.00	1.00	00.1	1.00	1.00 1.0	00.	00.	PCE Adj:	1.00 1.00	5 1.05	1.00 1.00	1.00	1.00 1.	1.00 1.00	0 1.00	1.00	1.00
MLF AGJ: Final Vol.:		9	; -	353	0		4	•	. 0	Final Vol.:	191 157		479		405 5		-	358	319
	Out Model to			=				1	-	Saturation Flow Module:	ow Modul			- - - - - - - - - -	; ; ; ;	! ! ! !	<u>:</u>	! ! ! !	1 ! !
Sat /Lane:	1900 1900 1900	0061 0061 00	1900	1900 1900		1900	1900 1900	00 1900	00	Sat/Lane:	1900 1900	0 1900	1900 1900		1900 19	1900 1900	0 1900		1900
Adjustment:	1.00	1.00		0.95	1.00		1.00 1.00		00.	Adjustment:	0.95 0.96	6 0.96	0.95 1.00	0.85	0.95 0.	0.95 0.95	5 0.95	3 1.00	0.85
Lanes: Final Sat.:	3610 3800 0.90	0 3800	1615	3610	9.0	1615	>			Final Sat.:	1805 2664		1805				- :		1615
	Canadian Daalysis Module.		!	-		-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	:	_	Capacity Analysis Module:	vsis Mod	ule:			; ; ; ;	1 2 1 1 1	<u>:</u> =		; ; !
Vol/Sat:	0.12 0.13 0.00	00 0.00 0.12	0.12	0.10	0.00		0.00 0.0	00.00	00	Vol/Sat:	0.11 0.06	90.09	0.27 0.09	9 0.18		0.15 0.15	5 0.02		0.20
Crit Moves:	;			,					9	Crit Moves:	* * *	* 6	****		0 24 0	0000	0 24	***	48
Green/Cycle: 0.26 Volume/Cap: 0.47	0.26 0.52 0.00	0 0.00 0.26	0.18	0.25	0.00	0.47	0.00 00.00	00.00	2 0	Volume/Cap:			0.94						0.41
Total Of Service Module			=	==		=			-	Level Of Service Module	rice Modu	1e:	<u></u>	-			<u>:</u> =	 	!
Delay/Veh:	20.4 8.5 0.0	0 0.0 20.4					0.0		0.0	Delay/Veh:			41.6		45.3 26			2 23.2	11.0
User DelAdj: 1.00 1.00		-	-		1.00		Н	-	0.0	User DelAdj:	1.00 1.00	0 1.00	1.00 1.00	1.00	1.00 1.	1.00 1.00	0 1.00	1.00	1.00
AdjDel/Veh:	20.4 8.5 0.0	0 0.0 20.4	4.6	13.0	. 0		000			Adjbel/ven: Oueue:	10.7 22.		16		14				9
********	* * *	****	****	******	*****	*****	******	*****	***	*******	*******	*****	********	******	******	******	*****	******	****
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	Maxim	FISCO/Po um Marin	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	n 2000 n Rail Hour	EIS/El Alterr	IR lative						FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	ISCO/Port m Marine/l	t Vision 200 /Minimum Rai PM Peak Hour	n 2000 m Rail Hour	EIS/EIR Alternative	ive	! ! ! !	: ! ! ! !	:
	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #7 Middle Harbor/New Mddl Hrbr Rd	Level Of Soperations of the Harbor/Never	Service Cc Method (F	Computation Report (Future Volume Alternative Hrbr Rd	Volume	port	native	*	* * * * * * * * * * * * * * * * * * * *	1 ************************************	60 + ##	Level Of H HCM Operations	Of Servicions Metho	Service C Method (omputat Future	Service Computation Report Method (Future Volume Alternative)	rt rernat *****	ive)		
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 0 (Y+ e: 134	(Y+R =	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	Critical Vol./Cap. Average Delay (sec/ Level Of Service:	Vol./ Delay Servi	Cap. ((sec/v ce:	(X): veh):	0.830 21.3 C	0.830 21.3 C	Cycle (sec): Loss Time (sec Optimal Cycle:	(sec): Time (sec): al Cycle:	100 12 (Y+R 92		sec) A	Critical Vol./ Average Delay Level Of Servi	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	Cap. (X): (sec/veh)	*	0.693 91.7	*
Approach: Movement:		<u> </u>	South Bound	und - R	Eas	East Bound	ع د د	West Bound	Bound - R	Approach: Movement:		· £	ຶ່ນ	South Bound	und - R	East I	Bound	E E	West Bound	a a
Control: Rights:	 Protected Include		Protected Include	 ed le	Pro	Protected Include	<u>-</u>	Protected Include	otected Include	Control: Rights:	 Spli I	Split Phase Include	<u> </u>	Split Phase Include	ase de	Split Phase Include	it Phase Include	Sp1:	Split Phase Include	
Min. Green: Lanes:	10 0	20	° °	°°	00	20	20	10 20 1 0 2	00	Min. Green Lanes:	10		20 1	۰,	20	10 2(0 1 0	20 20 0 1 0	10	20 1	20
Volume Module	:	<u>:</u> :		= '	!	;	<u>:</u> :	:	1 1	Volume Modul	<u>:</u> ;;	:	<u> </u>			;	}	<u>:</u>		
Growth Adj:	1.00	1.00 1.00	1.00		-		7	۲.	1.00	Base Vol: Growth Adj:	1.00	-	H.	1.0	1.00	4	r-i	1.00		78 1.00
Initial Bse: Added Vol:	0 0	229 538	00	00	00	215	131	94 88 257 260		Initial Bse Added Vol:	36 36	0 122 1041 0		43 0 0 670	15	30	14 13 0 0	689	39	78
PasserByVol: Initial Fut:	0 6	0 7.87	0 0	00	0 0	0 64	، د	0 0	0 0	PasserByVol:	0 4	0 0		0 0 0	0 1	0 0	0 0	0 6	0 6	0 0
User Adj:					1.001		т.			User Adj:	1.00				1.00	1.00 1.00		1.00		90.
PHF Volume:	0.1	767 0	0 1.00	00.1	1.00.1	432	131	.00 1.00 351 348	3 1.00	PHF Adj: PHF Volume	1.00	1.00 1.00 1041 122	i.	00 1.00 43 670	1.00	1.00 1.00 30 14	00 1.00 14 13	1.00.	1.00	1.00
Reduct Vol: Reduced Vol:	0 0 56	0	00	00	00	0 432	131	0 0 0	0 0	Reduct Vol: Reduced Vol	9.0	0 0	4	0 0	0 1	0 0	0 0	0 8	0 62	0 0
PCE Adj:			00 1.00		1.00 1		н,			PCE Adj:	1.00		-		1.00			1.00		1.00
	0 56	767 0	0 - 0		0.1	454	┥.	351 365	7	MLF AQJ: Final Vol.	1.05 1	1.05 1.05 1093 128	-i -i -i -i	5 1.05	1.05	1.00 1.00 30 14	00 1.00 14 13	1.00	39	1.00
Saturation Flow Module:	,	_		-	: : : : :	!	<u>:</u> <u>-</u> !		-	Saturation Flow Module:		:	!					<u> </u>		-
Sat/Lane: Adjustment:	1900 1900 1	1900 1900 0.85 1.0	1900 1900 1.00 1.00		1900 1900 1.00 0.97		1900 0.97 0.90	900 1900	1900	Sat/Lane: Adjustment	1900 :	1900 1900 0.99 0.99	1900	0 1900	1900	1900 1900 0.93	3 0.93	1900	1900 1	1900
Lanes: Final Sat.:	0.00	1.00 0.0 1615	0.00 00.0	- :	0.00	1.53 0		.00 2.00 805 3800		Lanes: Final Sat.	0.06 1		•					0.84		0.77
Capacity Ana.	Capacity Analysis Module: Vol/Sat: 0.05 0.00 0	.47	0.00 0.00	0.00	0.00	0.16 0	0.16 0.	.19 0.10	0.00	Capacity Analysis		Module:	3 0.20	0 0.20	0.20	0.02 0.02	20.02	0.06	0 90 0	90.0
Crit Moves: Green/Cycle:	0.57 0.00		0.00		0.00.0		* 0			Crit Moves: Green/Cycle:	0.28		•					0.20		0.20
Volume/Cap:	0.09 0.00	0.84 0.0	0.00 0.00	0.00 00.0	o ;	0 08 0	0.80	.84 0.22	0.00 2	Volume/Cap:	1.20	1.20 1.20	1.01	1 1.01	1.01	0.08 0.08	8 0.08	0.29	0.29 0	0.29
Level Of Service Module:	vice Module:		0	: -	_	20 1 20		, t	c	Level Of Service Module:	ervice Mc	odule:	_	u 0	- :					
User DelAdj: 1.00 1.00			1.00		1.00 1		٦ ٦		7	User DelAdj: 1.00	1:00.1	1.00 1.00					0 1.00	1.00	1.00 1	1.00
AdjDel/Veh:	6.4 0.0 1	16.3 0	0.0	0.0	0.0 29.1		29.1 33	3.2 11.5	0.0	AdjDel/Veh:	130.1	130 130.1	1 52.5	5 52.5	52.5	21.0 21.0	0 21.0	22.02	22.0 2	22.0
****	***************************************	*****		***********	*	***	*****	*******	*****	**********	*******	:	*************	******	******	*******	* * * * * *	******	*****	× * * * * *

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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Maxim	FISCO/ um Mar	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	t Vision 200 /Minimum Rai PM Peak Hour	00 EIS/EI il Altern	EIR					Σ	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	J/Port arine/M	FISCO/Port Vision 2000 um Marine/Minimum Rail PM Peak Hour	000 EIS/EIR ail Alterna ur	EIS/EIR Alternative			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #9 7th/New Middle Harbor	Level Of Service 1994 HCM Operations Method ************************************	vel Of ration	Level Of Service Computation Report perations Method (Future Volume Alt	Comput (Futur	cation Free Volum	Computation Report (Future Volume Alternative)	native	*****	*	Levers 1994 HCM Opers ************************************	1994 HCM ********	Level Of Service HCM Operations Method	Of Service ons Method ************************************	ice Comp nod (Fut	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative) ************************************	Report	rnative ******	****	*
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 58 Level Of Service:	100	(Y+R =	4 sec)	Critic Averag Level	critical Vol./Cap. Average Delay (sec/Level Of Service:	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): veh):		0.765 20.7 C	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 10 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 70 Level Of Service:	* * * * * * * * * * * * * * * * * * *	100 10 (Y+R 70	* * *	Crit Sec) Aver Leve	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	/cap. /sec/rice:	(X): veh):	**************************************	******* 0.429 18.9 C
**************************************	North Bound South Bound East Bound L - T - R L - T - R L - T - R	nd R	South Bound	Bound F - R	Ea L	East Bound	* 0 ×	* 3	********** est Bound - T - R	######################################	North	**************************************	Sout	South Bound	****** R L .	******** East Bound - T -	* * * * * * * * * * * * * * * * * * *	*********** West Bound L - T - R	**************************************
Control:	Protected	= 	Protected	otected The lude		Protected	<u>-</u>	Protected Trolude	ted	Control:	 Protec	Protected Thelude	Pro-	Protected Include		Protected Thelude	<u>-</u> - - -	Protected Tnclude	otected Thelude
Aignes: Min. Green: Lanes:	10 0 0	20 1	0	•	0	20	. 0 50	10 20	00	Min. Green: Lanes:	2 0 0	20 20	100		20 10 0 1 0	20	1 20	10 20 1 0 1	0 20
Volume Module:		= '			<u>:</u>		<u>-</u>	:	! !	Volume Module	;	1 1 1 1			<u>-</u>			:	; ; ;
	1.00 1.00 1		1.00 1.00	0 1.00	1.00	1.00 1	1.00 1.	00 1.0	1.00	Growth Adj:	ri.	1.0	1.00.1	<u> </u>	1.00			-	0 1.00
Initial Bse: Added Vol:	00	208	00			624		391 426	o o	Initial Bse: Added Vol:	441	0 110	סע		0 0 0	4. 0.	247	81 0	4 0
PasserByVol:	00	0 0	00	00	00	0 403	0 0	0 0	00	PasserByVol:	0 644	0 0 0	00	0 %	0 0 0	454	0 457	0 0 81 624	0 0
User Adj: '	1.00		Н		1.00	1.00		8		User Adj:	1.00 1.00		1.00		1.00	1.00		1.00,1.00	
PHF Adj: PHF Volume:	1.00 1.00 1	1.00 508	1.00 1.00	0 1.00	1.00	1.00	1.00 0 3	.00 1.00 391 426	0 1.00	PHF Adj: PHF Volume:	441 23	7 7	1.00		2 6			1.00 1.00 81 624	0 1.00 4 13
Reduct Vol:	00	0 80	0 0	00	00	624	00	391 426	00	Reduct Vol: Reduced Vol:	441 2	23 110	00	. 23	23 20	454	0	0 0 81 624	0 0
PCE Adj:	1.00		-		1.00	1.00	-	10.		PCE Adj:	1.00 1.00		1.00		1.00	1.00			н.
MLF Adj: Final Vol.:	00 1.00	1.00 508	0 1.00	1.0	90	655	0.1	391 447	0.1	Mur Adj: Final Vol.:	454 23	23 110	9 23	23 23	20 50	499	503	81 655	5 1.05
Saturation Flow Module:	•	_				:			- 00	Saturation Fl	Flow Module	le: 1900			0001 0001 00	:			
Sat/Lane: Adjustment:	1.00		1.00 1.00		1.00	1.00				Adjustment:	0.95 0.88		0.95		0.95	0.93		0.95 1.00	
Lanes: Final Sat.:	1.00 0.00	1.00	00.00.00		9 -	3800	0.00		0	Final Sat.:	2.00 0.17 3610 289				1805	2640	1.51 1 2661 1	1805 3720	
Capacity Analysis Module:	lysis Module	.31	0.00 0.00		0.00	0.17	0.00.0		00.00	Capacity Analysis Module:	lysis Modu 0.13 0.08	dule: 08 0.08	0.00	0.03 0.03	0.01		0.19 0	0.04 0.18	8 0.18
Crit Moves: Green/Cycle: Volume/Cap:	0.00 0.00	0.41	0.00 0.00	00.00	0.00	**** 0.23 0.76	0.00 0.00 0.00	.28 0.51 .76 0.23	0.00	<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.24 0.29 0.52 0.27	29 0.29 27 0.27	0.15	0.20 0.20 0.13 0.13	0.15	0.36 0	* 0.36 0 0.52 0	**** 0.10 0.31 0.45 0.57	1 0.31
Level Of Service Module:	vice Module:	20.0	0.0 0.0	0.0 0.0	<u>-</u>	0.0 26.3	0.0 25	8.8	0.0	Level Of Service Modul Delay/Veh: 21.8 17.6		ıle: .6 17.6	23.62	21.2 21.2	23.4	16.5 1	16.5 2	28.6 19.4	19.4
User DelAdj: 1.00 1.00 AdjDel/Veh: 0.0 0.0			-	-		1.00 1		000 1.000	~	÷	1.00 1.00 21.8 17.6	00 1.00	1.00 1		1.00			1.00 1.00 28.6 19.4	
Quene: 0 0 13 0 0	0 0	13	0	:	0 0	18	0 **	11 7	0 2	Queue:	11	1 2	0 * * * * * *	1	1 0	11	11	2 16	*

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C-PM.CMD	E	Tue Nov 5, 1996 12:31:58	12:31:58			Page 1	14-1	C-PM, CMD		Ţ	Tue Nov 5,	1996 12	12:31:58		Page	je 15-1
	FISC Maximum Ma	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alterna PM Peak Hour	2000 EIS/I Rail Alter Iour	EIS/EIR Alternative					Maxi	FISCO	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	t Vision 200 /Minimum Rai PM Peak Hour	00 EIS/EIR 11 Alternative	ive	1 1 1 1 1 1 1 4) † 1 !
6 ***	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of Service Computation Report perations Method (Future Volume Alt	putation iture Volum	Report me Altern	(ative)		•	1994	*	Level Of peration	Service 1s Method		Level Of Service Computation Report HCM Operations Method (Future Volume Alternative)	rt lternat:	[ve)	*
Intersection #	Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp	5th St./ I-8	180 SB Rami	# * * * * * * * * * * * * * * * * * * *	* * * * *	****	***	Intersection #14 Union St./ 5th St./ I-880 North Ramps	#14 Union	St./ 51	5th St./	I-880 NC	I-880 North Ramps	***	*	***
Cycle (sec): Loss Time (sec):	100): 12 (Y+R =	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh):	Critical Vol./Cap. (X): Average Delay (sec/veh)	./Cap. () y (sec/ve	. (q 	0.656	10 1	Cycle (sec): Loss Time (sec)	100 ec): 11	(Y+R =	4 sec)	Critic Averag	Critical Vol./Cap. Average Delay (sec/	Cap. (X): (sec/veh):		0.199
Optimal Cycle:	82	\ \ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	Level Of Service:	V10e:	:			Optimal Cycle:	e: 71 *********	****	****	Level	Level Of Service: *************	*****	*****	· * * * * * * * * * * * * * * * * * * *
Approach: Movement:	North Bound L - T - R	South Bound	צ	East Bound - T -	R L	West Bound	und - R	Approach: Movement:	North Bound	und - R	South	outh Bound - T - R	East Bound L - T -	Bound - R	West	West Bound - T - R
-					=						1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Control:	Protected	Protected		Split Phase		Split Phase Include	35e	Control:	Protected	ed	Prot.	Protected Trainde	Split Phase	it Phase Traludo	Split	Split Phase
Min. Green:	10 20 20	10 20	20 10	10	20 10		20	Min. Green:	0 20	20	0		10	0 20	10	20 20
Lanes:	10110	1011	0	1 0 1	0	0		Lanes:	0 0 1	יי	0	1 1 0	0 1 0	0 1	0 1	~
Volume Module.	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			<u>:-</u>	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!		Volume Module		1	1				-	-
Base Vol:	0 0	241 0	69 138	157	0	0 202	616	Base Vol:	0 194	281	0 14	144 30	31 97	7 18	32	31 34
	1.00 1.00 1.00	1.00		1.00	1.00 1.0	-	1.00	Growth Adj:	1.00 1.00	1.00	1.00 1.00	00.1.00	1.00 1.00	1.	Н	.00 1.00
a)	0 ;		7	157	•	0 202	616	Initial Bse:	19	281		m	31 9	7	32	31 34
Added Vol:	0 0 0 0	0 134		> c	874 0	, c		Added Vol: PasserBvVol:		5 C	o c	0 0	o c	0 0	154	0 0
	216 6	H	138	157	4.5		616	Initial Fut:		360		m	31 9	-	186	31 34
	_	1.00 1.00	1.00	1.00			0.50	User Adj:	-	1.00			1.00		_	ij.
PHF Adj: 1.	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00	1.00 1.00	0 1.00	1.00	PHF Adj:	1.00 1.00	1.00	1.00 1.00	i.	1.00 1.	H.	-	-i
	0 7 7) O	r		800	Reduct Vol:		0 90		144 30	76 17	81 0	981	31 34
	216 6	H	7	157	79 458		308	Reduced Vol:	19	360		m	31 9	1	186	31 34
		1.00 1.00	1.00	1.00	Н		1.00	PCE Adj:	1.00 1.00	1.00	1.00 1.00		1.00		П	
	1.00 1	1.00 1.05	-	1.10	H,	-	1.05	MLF Adj:	_	1.10	1.00 1.05	05 1.05	1.05 1	۲.	7	.00 1.00
Final Vol.:	154 216 670	241 140	72 152	173	87 458	8 212	323	Final Vol.:	0 213	396	0 1;	51 32	33 102	2	186	31 34
ation Fl	w Module:		=		=	•	-	Saturation Flow Module:	low Module:	-						
	1900	1900 1900	1900	1900	6 (1900	Sat/Lane:	1900 1900	1900			1900		1900 19	
Adjustment: 0	1 00 1 00 1 00	0.95 0.95	26.0 56.0	26.0	26.0 56.0	16.0 56	0.91	Adjustment:	1.00 0.90	06.0	1.00 0.97	75 0.97	0.97 0.97	7 0.97		
Sat.:	1900	1805 2384	1999	2275	. 6		2088	Final Sat.:	0 1794	3336	30		790		1805 19	1900 1615
					=	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-			=;						
Vol/Sat: 0	0.09 0.11 0.41	0.13 0.06	0.06 0.08	0.08 0.08 0.	0.08 0.25	5 0.15	0.15	Vol/Sat: 0.00	0.00 0.12	0.12	0.00 0.05	35 0.05	0.04 0.04	1 0.04	0.10 0.	0.02 0.02
	* * * *	***			*			Crit Moves:								* * * *
	0.20	0.17.0.24	0.20	0.20	· ·		0.31	Green/Cycle:	0.00 0.37	0.37	00.		0.20			
Volume/Cap: 0.7	0.70 0.57 0.81	0.81.0.24 0	0.24 0.38	0.38 0	0.38 0.81	1 0.49	0.49	Volume/Cap:	0.00 0.32	0.32	0.00 0.13	13 0.13	0.21 0.21	0.21	0.32 0.	0.05 0.07
Level Of Service Module:	ce Module:	<u>-</u>	=		=		_	Level Of Service Module	rice Module	-					-	
Delay/Veh: 3:		36.2 19.7	22.5	22.5	56		18.3	Delay/Veh:	0.0 14.6	14.6	0.0 13.5		21.6			
User DelAdj: 1	1.00 1.00 1.00	1.00 1.00	1.00	1.00	1.00 1.00	0 1.00	1.00	User DelAdj:	1.00 1.00	1.00	1.00 1.00				1.00 1.	
		36.2 19.7	19.7 22.3	U. 22	7		10.3	Adjuet/ven:	0.0 14.6	4. p	0.0	ن. د. 13. د	21.6	21.6	16.7 15	15.2 15.2
**********			***************************************	********	*	******	****	*********	*********	*****	******	*****	*******	*****	******	*****

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C-PM.CMD		Ž	Tue Nov 5, 1996 12:31:58	196 12:	31:58			Page	16-1	C-PM.CMD		Ę.	Tue Nov 5, 1	1996 12:31:58	31:58		Pa	Page 17-1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Maxir	FISCO,	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour	on 2000 im Rail	EIS/E Alter	IR	1 1 1 1 1	1 1 1 1 1 1			Мау	FISC cimum Ma	FISCO/Port Vision 2000 Maximum Marine/Minimum Rail PM Peak Hour	t Vision 2000 /Minimum Rail PM Peak Hour	EIS/EIR Alternative	v v		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ************************************	Level Of Service 1994 HCM Operations Method #15 7th St./ I-880 NB Ramp	evel Of	Level Of Service Computation Report perations Method (Puture Volume Alt	Computation Report (Future Volume Alternative)	tion R Volum	eport	rnativ	1 * 1		1994 HCM		Level Of S HCM Operations 7th St./ I-880		Computa (Future	Service Computation Report Method (Future Volume Alternative)	ternati		
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 100 9: 70	100 10 (Y+R = 70	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	Critical Vol./Cap. Average Delay (sec, Level Of Service:	l Vol. Delay f Serv	/Cap. (sec/vice:	(X) : 'veh) :		0.413 17.6 C	Cycle (sec): Loss Time (sec): Optimal Cycle:	: c) ::	100 5 (Y+R 35	4 sec)	Critical Average L Level Of	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	c/veh):		0.472 5.7 B
Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R L	North Bound	und - R	South Bound	ound - R	Eas	East Bound	nd R	* 32	est Bound	Approach: Movement:	i z	3ound - R	South Bound	ound . R	East Bound L - T -	ound - R	Wes	West Bound
Control:	Protected	ed	Protected		 Pr	Protected	=	Protected	otected	Control:	 Protected Toolude	ted	 Protected The lude	 red red	 Protected Trollide	ted	Prof	Protected
Kights: Min. Green: Lanes:	10 20 2 0 0 1	1 0 1	10 20	2 20	100	20 2	0 0	0 0 20	1 0	Min. Green: Lanes:	000	000	0 0 0	0	0 0 20	20	10	20 20
Volume Module		-		-	<u>:</u>		=	1	-	Volume Module	:			-		-	-	
Base Vol:	0 197	m 5	22 6	205	0 108		0 6	0 53		Base Vol: Growth Adi:	0 0 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	378	0 0 1.00
Growin Adj: Initial Bse:	0 197	6 m	2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	205				;		Initial Bse:	i	i	0 0	0	0 0		378	
Added Vol:	381	0 0	00	316	447	. 0	5 0		- o	Added vol: PasserByVol:				0		0	00	90
Initial Fut:	381 197	m	5 0	521	447		0			Initial Fut:							378	
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00		1.00	1.00 1.00	1.00	User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00.1	1.00 1.00
ïë:	381 197		2 7.20	521	447			0		PHF Volume:							378	
Reduct Vol:	0 0	0 -	0 0	0 102	0 4 4 0	0 6	00	0 6	0 -	Reduct Vol: Reduced Vol:	00	0 0	00	0 0	0 0	550	378	0 2 4 0 0 4
PCE Adj:	_	1.00	1.00 1.00	1.00	1.00 1.00		1.00 1	1.00 1.00	1.00	PCE Adj:			7	1.00				
MLF Adj:	1.03 1.00	1.00	1.00 1.00	1.13		1.05	1.00	1.00 1.05	1.05	MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.05	1.00	1.03 1.	1.05 1.00
Final Vol.:	392 197		2 0	1	44/	124	<u>:</u>	2	-	Finds Vot.:		1			- ;	-	- 1	
Saturation Flow Module: Sat/Lane: 1900 1900	low Module: 1900 1900		1900 1900		1900 1900	1900	_	00		Saturation Fl Sat/Lane:	Flow Module: 1900 1900	1900	1900 1900	1900	1900 1900	1900	1900 19	1900 1900
Adjustment: Lanes:	2.00 0.98	0.05	. 0		1.00	2.00			. 0	Lanes:	0.00 0.00		0.00 0.00		0.00 2.00		2.00.2	
Final Sat.:	3610 1872	29	1805 0	3230	1805	3800		7575 0		Final Sat.:		1	1	-		- :		
Capacity Analysis Module:	lysis Module	e: 0.11	0.00 00.0	0.18	0.25	0.03	00.00	0.00 0.02	- 0.02	Capacity Analysis Vol/Sat: 0.00	lysis Modul 0.00 0.00	le: '	0.00 0.00	0.00	0.00 0.13	0.34	0.11 0.	0.19 0.00
Crit Moves: Green/Cycle: Volume/Cap:		0.23	0.12 0.00	0.55		0.55 0	0.00	0.00 0.20	0.20	Green/Cycle: Volume/Cap:	0.00 0.00	0.00	0.00 0.00	0.00	0.00 0.72			0.95 0.00
				- !	<u>:</u>	- :	=			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								
Level Of Service Module Delay/Veh: 29.0 21.6 User DelAdi: 1.00 1.00	vice Module: 29.0 21.6	21.6	25.2 0.0 1.00 1.00	8.1	20.9 6.8		1.00	0.0 21.0	21.0	Level Of Service Module: Delay/Veh: 0.0 0.0 User DelAdj: 1.00 1.00	vice Modul 0.0 0.0 1.00 1.00	e: 0.0 1.00	0.0 0.0	0.0	0.0 2.9	4.0	21.9 (0.1 0.0
AdjDel/Veh:	29.0 21.6	21.6	25.2 0.0		20.9			0.0		AdjDel/Veh:	0.0		0.0		0.0 2.9		21.9 (
**************************************	1 *******	*	* * * * * * * * * * * * * * * * * * * *	•	****	* * * * *	* * * *	* * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	****	* * * * * * * * * * * * * * * * * * * *	*******	****	******	*****	*****	*****

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	Maximum Marine/Minimum Rail Alternative PM Peak Hour
	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ***********************************
**************************************	**************************************
	11 (1** = 4 Sec) Average Delay (Sec/ven): 81 Level Of Service:
	North Bound South Bound East Bound West Bo
Include Include 1 0 1 0 2 0 0 0 0 0 0 1	
Volume Module:	Include Include Include
0 62 130 4 0 0 0 0 0 115	s: 1 0 1 1 0 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Volume Module:
0 447 0 0 316 0 0 0 0 0 0	75 72 0 759 0 6 86 277 3 0 456
Fasserbyvor: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 11 11 1	Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0 288 160 0 213 0 0 110 0 103
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	
	Intrat fuc: /3 350 150 /39 213 6 86 387 3 103 537 330 User Adi: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
130 4 316 0 0 0 0 115 0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Adjusted Volume Module:	160 759 213 6 86 387 3 103 53
e/Cars: xxxx xxxx xxxx xxxx xxxx xxxx	
omb: xxxx xxxx xxxx xxxx xxxx xxxx xxxx	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
00 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1	1.00 1.05 1.05 1.05 1.00 1.00 1.00 1.05 1.05
CYCL/CAI FCE: XXXX XXXX XXXX XXXX XXXX XXXX XXXX TTCK/CMb PCE: XXXX XXXX XXXX XXXX XXXX	Final Vol.: 75 378 168 797 213 6 86 406 3 103 590
09 130 4 316 0 0 0 0 127 0	Module:
•	1900 1900 1900 1900 1900 1900 1900 1900
MOVEUD IIMEIXXXXX XXXXXXX XXXXX XXXXXX XXXXX XXXXX XXXX	ment: 0.95 0.95 0.95 0.95 1.00 1.00 0.95 1.00 1.00 0.95 0.94
	Final Sat.: 1805 2499 1111 3610 1848 52 1805 3772 28 1805 3217 2041
Chilist Vol: xxxx xxxx xxxx x 639 xxxx xxxxx xxxx xx	Analysis Module:
1,00 xxxx xxxxx xxxx xxxx 0,99 xxxx 1	VOI/SAC: U.U4 U.15 U.15 U.22 U.12 U.12 U.05 U.11 U.11 U.06 U.18 U.18 Crit Moves: ****
: XXXX XXXX XXXXX 778 XXXX XXXXX XXXX XX	: 0.22 0.22 0.22 0.32 0.32 0.32 0.10 0.24 0.24 0.12
	0.19 0.70 0.70 0.70 0.36 0.36 0.48 0.45 0.45 0.48 0.70
Level Of Service Module: Stanned Del.vvvv vvvv vvvv 4 7 vvvv vvvvv vvvv vvvv	Total Of County Makes
* A * * A * A	Veh: 20.7 25.2
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT	j: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
XXXX	/Veh: 20.7 25.2 25.2 20.4 17.1 17.1 29.0 21.3 21.3 28.0 22.9
SOLD GEDDELIXXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX	0 3 15
	· 电中极电极电极电极电极电极电极电极电极电极电极电极电极电极电极电极电极电极电极

Ma - d	Tue Nov 5. 1996 13:07:18			Page 1-1		Table J.7-9							
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			;			D-AM.CMD	Tue Nov 5, 1996 13:07:18	996 13:07	7:18			Page 1-2	;
	FISCO/PORT VASION 2000 EIS/EIK Reduced Harbor Fill Alternative AM Peak Hour	tive	1		:		FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	t Vision 2000 Fed Harbor Fill	SIS/EIR Alternat	ive			
	Trip Generation Report					Zone # Subzone	Amount Units	Rate	Rate	Trips 1	Trips 7	Total % Of Trips Total	% Of Total
Zone # Subzone Amount	Rate Rate Units In Out	Trips Trips In Out		Total	\$ Of Total	Zone	Zone 28 Subtotal			323	343		10.5
New Harbor 1088.00 Zone 1 Subtotal	Employers 0.26 0.65	283 283	54	337	5 . 3 . 3	TOTAL		1 .		3443	2875	6318 100.0	0.0
3 J.I.T. 343.00 Zone 3 Subtotal	Employees 0.40 0.09	137	31	168	2.7								
6 Middle Harbr 516.00 Zone 6 Subtotal	Employees 0.26 0.05	134	26	160	2.5								
7 7th St Harbr 613.00 Zone 7 Subtotal	Employees 0.26 0.05	159	31	190	3.0								
8 Outer Harbor 706.00 Zone 8 Subtotal	706.00 Employees 0.26 0.05 blototal	184	35 35	219	3. s. s. s.								
10 New Park 1.00 Total Trip Zone 10 Subtotal	1.00 Total Trips 29.00 19.00 stotal	29	19	4 4 8 8	8.00					,	•		
11 New Harbor 1.00 T Zone 11 Subtotal	1.00 Trucks Inter 279.00 297.00 itotal	279	297 297	576 576	9.1								
16 Middle Harbr 1.00 T Zone 16 Subtotal	Trucks Inter 132.00 141.00	132	141	273	4.3								
17 7th St Harbr 1.00 T Zone 17 Subtotal	Trucks Inter 158.00 168.00	158 158	168	326 326	5.2								
18 Outer Harbor 1.00 1 Zone 18 Subtotal	1.00 Trucks Inter 181.00 193.00 total	181	193	374	ა. დ. დ.								•
21 New Harbor 1.00 Zone 21 Subtota	1.00 Truck External 497.00 529.00 Subtotal	497	529 529	1026	16.2 16.2								
23 J.I.T. 1.00 1 Zone 23 Subtotal	1.00 Truck External 431.00 459.00 total	431	459	890	14.1 14.1								
26 Middle Harbr 1.00 T Zone 26 Subtotal	1.00 Truck External 236.00 251.00 total	236	251	487	7.7								
27 7th St Harbr 1.00 Zone 27 Subtotal	t Harbr 1.00 Truck External 280.00 298.00 Zone 27 Subtotal	280	298 298	578 578	9 .1 1.								
28 Outer Harbor 1.00	1.00 Truck External 323.00 343.00	323	343	999	10.5								
Traffix 6.8.0306 (c) 19	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling	Dowling	Assoc.,	, Oakland	and	Traffix 6.8.0	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	oc. Licer	sed to D	owling	Assoc.,	Oaklan	70

D-AM.CMD

Zone

## Maritime St./ Burma St. Pack Hour	Tue Nov 5, 1996 13:07:19 Page
Turning Movement Report My Peak Hour Left Thru Right Left Thru Right Left Thru Right Voll ritime St./ Burma St. 5 331 0 6 74 178 107 0 5 0 0 0 0 1 5 331 0 6 74 178 107 0 5 0 0 0 0 1 100 5 1 39 103 542 106 82 0 382 22 0 87 2 144 2 62 39 103 542 106 82 0 382 22 0 87 2 155 3 10 0 0 281 106 82 0 382 22 0 87 2 156 335 0 0 384 279 240 0 868 0 0 0 0 3 157 7 7 4 5 C. Extension 0 0 0 620 0 632 577 303 0 0 375 759 3 158 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Vollar Left Thru Right Vollar Left Thru Right Vollar Left Thru Right Left Thru Right Vollar Left Thru Right Nollar Left Thru Right Left Thru Right Left Thru Right Left Thru Right Collar Left Thru Right Vollar Left Thru Right Collar Left Thru Right Vollar Left Thru Right Left Thru Right Collar Left Thru Right	
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		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FIS	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern	t Vision 2000 ed Harbor Fil AM Peak Hour	on 2000 oor Fil	D EIS/1	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	, o		† 	1 1 1		FISCO/Port V Reduced	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	/EIR ternative		
Volume Type	NB In Out	NB Link In Out Tetal	•	Shink EF Link In cut Ictal In Out Total	sh tank cut Tetal	. <u>.</u>	EP LIRK Out Tot	ak Total	=======================================		:	Total		Impact A Level	Impact Analysis Report Level Of Service			
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#244 Base Added	00			-288 -312 -600 -359 -333 0 0 0 0 0	009-	.359		-692	-45	-47		-1384 0	# 3 Maritime St./ Burma St.	Burma St.	LOS Veh C B 6.3 0.089	LOS	Veh C 8.5 0.267	+ 2.127 D/V
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													# 5 Maritime St./	5 Maritime St./ 7th St. Extensio	B 12.7 0.071	υ	19.0 0.926	+ 6.292 D/V
													# 6 7th St./ 7th St. Extension	St. Extension	B 11.8 0.000	υ	15.7 0.819	+ 3.884 D/V
													# 8 Adeline St./ 3rd St.	3rd St.	B 8.7 0.064	ſω	82.2 0.673	+73.447 D/V
·													# 9 7th/Middle Harbor Rd	rbor Rd	C 15.8 0.000	υ	16.7 0.643	+ 0.833 D/V
													# 10 New Harbor/Mid Harbor Rd	d Harbor Rd	0.0 0.000	۵	25.1 0.888	+25.103 D/V
													# 12 Maritime St./	12 Maritime St./ W.Grand Ave./ I-	B 12.0 0.242	υ	16.6 0.525	+ 4.626 D/V
													# 13 Adeline St./	13 Adeline St./ 5th St./ I-880 SB	C 18.3 0.236	υ	24.3 0.838	+ 6.070 D/V
													# 14 Union St./ 5t	14 Union St./ 5th St./ I-880 Nort	C 16.4 0.104	υ	17.6 0.395	† 1.212 D/V
													# 15 7th St./ I-880 NB Ramps / Fron	10 NB Ramps / Fron	B 13.0 0.366	υ	21.3 0.565	+ 8.317 D/V
													# 16 7th St./ I-880 SB Ramps	10 SB Ramps	A 0.1 0.020	ĸ	1.4 0.414	4 1.319 D/V

C 3.0 0.000 + 0.000 V/C C 21.7 0.456 + 1.899 D/V

2.8 0.000

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17 14th St./ I-880 Frontage Rd.

18 W.Grand Ave./ I-880 Frontage R C 19.9 0.237

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	*	FISCO/Pc Redu	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	on 2000 bor Filk Hour	0 EIS/	EIR ernati	e ×			·			FISC	FISCO/Port Vision 2000 BIS/BIR Reduced Harbor Fill Alternative AM Peak Hour	ision 200 Harbor Fi Peak Hour	2000 El Fill 7	EIS/EIR	ive	1 1 1 1 1 1	
Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternativ Intersection #3 Maritime St./ Burma St.	Level Of S perations ************************************	Of Service Computation Report ions Method (Future Volume Alt ''.' Burma St.''	Computation Report (Future Volume Alternative)	ation e Volument	Report	ernati *****	ra)		* * * * * * * * * * * * * * * * * * *	Level 0 1994 HCM Operatio	Lev 1994 HCM Oper	Level Of perations	Level Of Service C Operations Method (putatic ture VC	Computation Report (Future Volume Alternative)	ternati	*	* * * * * * * * * * * * * * * * * * *
Cycle (sec): Loss Time (sec): Optimal Cycle:	100	+ R =	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	al Vole Delay	./Cap. y (sec.	(X): /veh):	-	0.267 8.5 B	•	Cycle (sec): Loss Time (sec): Optimal Cycle:	ec):			Crit sec) Aver Leve	Critical V Average De Level Of S	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	. (X): c/veh):	* * *	0.807 20.5 C
Approach: Movement:	North Bound	=	South Bound	ound - R	. E	East Bound - T -	und - R	West	t Bound T	ש	Approach: Movement:		ound R	Sout	South Bound	d R L	South Bound East Bound L - T - R L - T -	ound - R	******* West	**************************************
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••	10 20	0 70	10 20	1 0	ر د د	20	0 0	。。	000	۰ ،	Min. Green: Lanes:	10 20 1 0 1	20	10	20	20	10	20	10	20 20
Volume Module	e: 7 78	-	780		<u> </u>					<u> </u>	dul	:		:		-	:			
Growth Adj:	1.00		-	1.0		1.0	1.00	-	.00.	90.	Growth Adj:	<u> </u>	1.00			7	1.0	1.00	-	0 87 .00 1.00
Added Vol:	14			178	107	•	n 0	0	•		Initial Bse: Added Vol:	0 91 404 171	660	103	261 281 1	106	82 0	382	22	0 87
PasserByvol: Initial Fut:	0 5	00	0 0	0 t	0 6	0 0	0 1/	0 0	0 0	0 0	PasserByVol:		٥					0	0	
	1.00		.00 1.00		1.00	1.00	1.00	-		1.00	uniciai ruc: User Adj:	1.00 1.00	1.00		542 1 1.00 1.	1.00 1.	82 0 1.00 1.00	382	22 1.00 1.	0 87
PHF Volume:	331	1.00	1.00 1.00 0 674	1.00	1.00	1.00	1.00	1.00 1.	.00	00.	PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1	1.00 1.	1.00 1.	1.00 1.00	1.00	1.00 1.	.00 1.00
Reduct Vol:	0 0	0 0	0 0	0 178	0 ,	0 0	Ou	0 0	0 0		Reduct Vol:		0					0	0	
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MLF Adj: Final Vol.:	.00 1.05 5 348	1.05 1.	1.00 1.05 0 708	1.05	1.00	1.00	1.00	1.00 1.	.00	00.	MLF Adj: Final Vol.:	1.00 1.05	1.05	1.00 1			1.00 1.00 82 0		-	-
Saturation Flow Module:	low Module:				-				1										1 1 1 1	
Sat/Lane: Adjustment:		1900 19	1900 1900	1900	1900 1900 0.95 1.00	1900	1900	1900 19	1900	1900	Saturation Flow Module Sat/Lane: 1900 1900 Adjustment: 0.95 0.98	low Module: 1900 1900 0.95 0.98	1900	1900 19	1900 19	1900 1900	00 1900	1900	1900 1900	1900
Lanes: Final Sat.:	5 3800	0.00 1.	1.00 1.58 1900 2916	0.42	1.00	0.00	1.00	0.00 0.		0.00	Lanes: Final Sat.:		0.26							
Capacity Analysis Module	lysis Module:		0.00.024	0.24		000					Capacity Analysis Module	lysis Modul	1 0	; (_	1		;	;
es: cle:	0.48		0.00 0.62	0.62			0.20				Crit Moves:	00.0 ***	5 6					0.34		
Volume/Cap:	0.19	=	0.00 0.39	0.39	0.30	0.00	0.02			0.00	-		0.25	0.34 0.	0.81 0.	0.81 0.81	31 0.00	0.48	0.05 0.00	00 0.42
- Z		-		- (_		-			_	Level Of Service Module	rice Module		-	! ! !		1 1 1 1 1			
Delay/Ven: User DelAdj:	26.2 9.6 1.00 1.00 1	1.00 1.	1.00 1.00	1.00	22.1	1.00	1.00	0.0 0 1.00 1.	0.0	0.0	Delay/Veh: User DelAdi:	28.3 15.6	15.6	24.0 27	72 7.72	27.7 22.4	4 0.0	4.9	11.2 0.0	0 11.6
/Veh:	26.2 9.6	0.0	0.0 6.2	6.2		0.0	20.7	0.0	0.0	0.0		28.3 15.6	15.6	24.0 27			4 0.0	4.9		
Queue:	****	* * * * * * * * * * * * * * * * * * * *	*******	7 * * * *	* * * * *	***	****	0	0 *	0 *	Queue:	12 6	****	3	16	4 * * * * *	3 0	5	0	0 1

D-AM.CMD		Tue M	Tue Nov 5, 1996 13:07:19	36 13:C	37:19			Page	e 8-1	D-AM, CMD		Tue Nov	5,	1996 13:	13:07:19	1	Page	9-1
	. E.	ISCO/Po	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	rision 2000 Harbor Fill Peak Hour	EIS/E	IR rnativ	, , , , ,	1 1 1 1 1 1 1				ISCO/F	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern AM Peak Hour	ision 2000 Harbor Fil Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	l ve	1 1 1 1 1 1 1 1	6 1 1 1 1
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	el Of Se	Service Cost Method (1	Computation Report (Future Volume Alt	tion R	eport e Alte	rnativ	* * * * * * * * * * * * * * * * * * * *	1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 *	Level Of 1994 HCM Operations ***********************************	HCM	el Of Sations attions attions attions attions attinuted	Service Method *******	Computa Future	Service Computation Report Method (Future Volume Alternative) ************************************	ernative	ve)	*
Intersection #5 Maritime St./ 7th St. Extension	#5 Maritime &	St./ 7t.	h St. Ex	tens101		* * * * * *	* * * * * *	******	*******	·)	*******	*****	*****	*****	*************	****	********	******
Cycle (sec):	100		ΰ.	Critical Vol./Cap.	1 vol.	/Cap.	:: (X)	. ,	0.926	Cycle (sec):	100	= 8+A)	4 0 d u	Tritica Average	Critical Vol./Cap. (X):	(x):	0.819	وا لـ
Loss Time (sec): Optimal Cycle:	c): 8 (Y : 116	(Y+R =	4 sec) Average Delay (sec/ven) Level Of Service:	Average Level Of	re Delay (se Of Service:	ice:	ven):	-1 -1	0.61	Optimal Cycle:			*	Level C	70 Interpretation of Service:	*	· · · · · · · · · · · · · · · · · · ·	
Approach:	**************************************		South Bound	und R	# 1 Eas	East Bound	nd R	West I	West Bound	Approach: Movement:	North Bound L - T -	Ę K	South Bound L - T -	ound - R	East Bound L - T -	ound R	West Bound	ound R
Control:	Protect	÷	Protected		 Pr	Protected	p	Protected	 cted	Control:	Protected	<u>-</u>	Protected		Protected	Led Led	Protected	ed
Rights:	H	c	ov1	00	-	وم د	20	o Inc	Include 0 0	Rights: Min. Green:	Include 0 0	0	10 0	age 20	10 20	10e 20	0 20	20
Min. Green: Lanes:	2 0 2 0	° :	2 7 2 0 .	2 -	7 2	0		0	0	Lanes:	0 0 0	-	2 0 0	0 1	2 0 2	0 0	0 0 1	1 1
Volume Module:		!	!	-	<u>:</u> :	; ; ;	-			Volume Module			c	· c		. 0		. 45
Base Vol:	159 0	000	0 0 1	334	1.00 1.00		37	1.00 1.00	0 1.00	Growth Adj:	1.00 1.00 1	0.	1.0	1.00	1.0	1.0	1.0	1.00
••				334	69		37			Initial Bse:	00	00	0 0	632	0 0 577 303	00	0 0 0	54 705
Added Vol:	947 335		0 384	6/0	0 47	. 0	0 0	. 0		PasserByVol:		0		0		0		0
<u> </u>	335			613			506	•		Initial Fut:	0 6	0 5	620 0	632	577 303	1.00	1.00 1.00	1.00
User Adj:	1.00 1.00 1.	1.00 1.	1.00 1.00	1.00	1.00	1.00	1.00	1.00 1.00	1.00	PHF Adj:	1.00		1.00 1.00					1.00
: :	335		0 384	613	309		908			PHF Volume:	0 0	0 0	620 0	632	577 303	0 0	0 375	759
	0 0	00	0 0	613	309	00	905	00	0 0	Reduct Vol: Reduced Vol:	00			632				759
•	1.00		1.00 1.00	1.00	1.00	1.00	1.00	1.00 1.00		PCE Adj:	1.00				1.00 1.00	1.00	1.00 1.00	1.00
	1.03 1.05 1.	1.00 1.	1.00 1.05	1.00	1.03 318	1.00	1.00 905	1.00 1.00	0 1.00	MLF Adj: Final Vol.:	0 0 0	0	638 0	632	594 318	-		797
_	- 1						1					<u>:</u> :						1
Saturation Flow Module: Sat/Lane: 1900 1900		1900 19	1900 1900	1900	1900	1900	1900	1900 1900	1900	Saturation Flow Module: Sat/Lane: 1900 1900 Adjustment: 1.00 1.00			1900 1900 0.95 1.00		1900		1900 1900	
	2.00		0.00 2.00 0 3800	1.00	3610	0.00			00.00	Sat.:	0.00 00.0	00.0	2.00 0.00 3610 0	1615	3610 3800	0.00	0.00 1.00	3230
Capacity Analysis Module:	lysis Module: 0.32 0.09 0	0.00 0.00	0.00 0.11	0.38	0.09	00.0	0.56	0.00 0.00	00.0 00	Capacity Analysis Module	lysis Module	00.00	0.18 0.00	0.39	0.16 0.08	00.00	0.00 0.20	0.25
Crit Moves: Green/Cycle:	0.65	0.00	0.00 0.31	0.57	0.27	00.00	0.61	0.00 0.00	00.00	Green/Cycle: Volume/Cap:	0.00 0.00	0.00	0.48 0.00		0.20 0.44	0.00	0.00 0.24 0.00 0.82	0.72
Volume/Cap:	0.91.0.14.0	_			: :		=		- !			=						
	rice Module: 27.7 4.3			10.7	19.0	0.0		0.0		Level Of Service Module: Delay/Veh: 0.0 0.0	vice Module:	0.0	10.8 0.0	19.3	29.8 11.0	0.0	0.0 25.9	3.4
User DelAdj: AdjDel/Veh:	1.00 1.00 27.7 4.3	1.00 1. 0.0 0	1.00 1.00 0.0 17.5	1.00	1.00	1.00 1.00 19.0 0.0		0.0 0.0	0.0	oser DeiAd): AdjDel/Veh:							0.0 25.9	
Queue: 34 4	34 4	0	0 0 9 12	12	7	7 0	25	0	0	Onene:	0 0	* * * * *	********	* T * * * * * * * * * * * * * * * * * *	·**********	* * * * *	***	•

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D-AM.CMD	 	Tue Nov 5, 1996 13:07:19	996 13	:07:19		Pa	Page 10-1	D-AM.CMD			Tue	Nov 5,	1996 13:	13:07:19		Page	11-1
	FISC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	t Vision 2000 ed Harbor Fil AM Peak Hour	0 EIS/EII	R native	:					FISCO/ Re	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern AM Peak Hour	on 2000 bor Fil k Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	ive		[
	Tests of Central Persons Person Charles Vises Attento	Territoria Perrata Peringatan di Peperdi Jerutoria Perrata di deduare Village And			L. Pegintal Lune Alterration			1994	1994	HCM	Level Of perations		Computa (Future	Service Computation Report Method (Future Volume Alternative)	c cernati	ce)	: * * * * * * * * * * * * * * * * * * *
Intersection	Intersection #8 Adeline St./ 3rd St.	3rd St.	* * * * * * * * * * * * * * * * * * * *	****	:	:	***	Intersect	ion #9	Intersection #9 7th/Middle Harbor Rd	le Harbor	. *	****	***********	***	*****	***
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 (c) : 12 (Y·R : 97	(Critica Average Level C	Critical Vol./Cap. (X): 4 sec) Average Delay (section) Level Of Setvice	Cap. (X (sec/ve		0.673 82.2 F	Cycle (sec): Loss Time (sec): Optimal Cycle:	sc): : (sec): 'ycle:	100 8 58	(Y+R =	sec)	Critica Average Level O	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	. (X): :/veh):	0.0	0.643 16.7 C
Approach: Movement:	• 14 1	South Bound	sound	East	East Bound	Mes.	t Bound	Approach: Movement:	1	North Bound	nd R	South Bound L - T -	ound R	**************************************	Bound F R	West Bound	**************************************
Control: Rights:	lit Phase Include	Split	hase	Split	Split Phase Include	<u>:</u> :	nase ide	_	<u>:</u>	Protected Include		Protected Include	 Led 1de	 Protected Include	ed de	Protected Include	otected Include
Min. Green: Lanes:	10 20 20 0 1 0 1 0	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 20	0 1	20 0 1	· · · · · · · · · · · · · · · · · · ·	0 1 0	20 Min Green: c Lanes:	:m: . 1	0 0 0	20	0000	000	0 20	1 0 .	10 20 1 0 1	1 0
Volume Module:		; ; ;	1 1 1	:		-	, , ,	unlov	 dule:	! !		! ! ! !	:	1		1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	8 0 31 1.00 1.00 1.00	1 26 0 0 1.00 1.00	1.00	1.001	.000	29 50 1.00 1.00 1	59 5 .00 1.0	56 Base Vol: 00 Growth Adj:	-	.00 1.00	1.00 1	0 0	1.00	1.00 1.00	1.00	0 0 1.00	0 1.00
Initial Bse: Added Vol:	8 0 31 0 793 0	1 26 0 0 1048	70	6 0	90	29 50	59 5	56 Initial Bse: 0 Added Vol:	se:	0 0	368	00	00	0 0	0 m		
PasserByVol:	0 0 0	0 0 0	0 0	0 0		0 0			'ol:	0 0	0 0		0 1		0 1		0
	1.00	۲.	7	1.00		1.00 1	.00.	oo talear Fut: Oo User Adj:	1.	00 1.00 1	368 1.00 1	0 0 0	1.00	1.00 1.00	1.00	399 609 1.00 1.00	1.00
PHF Adj: PHF Volume:	1.00 1.00 1.00 8 793 31	26 1048		1.00 1	.00 1.00	1.00 1	00.1 00.	00 PHF Adj: 56 PHF Volume:	٦.	1.00	1.00 1	00 1.00	1.00	1.00 1.00	1.00		1.00
Reduct Vol:	0 6	0 (0 (0		0		0		0
Reduced Vol: PCE Adj:	1.00 1.00 1.00	26 1048 7 1.00 1.00	1.00	1.00 1	6 29 .00 1.00	1.00 1	.00 1.00	56 Reduced Vol 00 PCE Adi:		17 0 1.00 1.00 1	368 1.00 1	1.00 1.00	1.00	0 513	1.00	399 609	1.00
MLF Adj: Final Vol.:		1.05		1.00 1	.00 1.	1.00 1.05 1 29 53	٦.		ų.	1.00				1.00 1.05	1.05	1.00 1.05	
:	-						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	+					- :		- ;	-
n Fl						0	•		C	••							
Adjustment:	0.99	1.00		0.97		. 94	1900 1900 0.94 0.94	u sat/Lane: 4 Adjustment:	<u>.</u> .	1,000	1900 1 0.85 1	1900 1900		1900 1900	1900	1900 1900 0.95 1.00	1900
Lanes: Final Sat.:	0.02 1.91 0.07 34 3585 142	7 0.05 1.90 2 89 3622	0.05	0.57 (0.43 1.00 790 1615	0.61	0.71 0.68 1273 1212	8 Lanes: 2 Final Sat.	1.00	0.00	1,00.0 1615	0.00 00.00	0.00	0.00 1.99	0.01	1.00 1.99	
: : : : : : : : : : : : : : : : : : : :			:		- :		1	_	. ;		=	;		- 1	=		-
a]	ysis Module: 0.23 0.23	3 0.30 0.30	0.30	0.01	0.01 0.	0.02 0.05 0	0.05 0.05		Analysis 0.01	Module 0.00	. 23	00.00 00.00	00.00	0.00 0.14	0.14	0.22 0.17	. 0.17
Green/Cycle:	0.21 0.21 0.21	0.27	0.27	0.20		0.20 0.20 0	0.20 0.20	Crit Moves: 0 Green/Cvcle	:S: :le: 0.35	00.0	*** ***	0000	c	****	20	****	0 57
		1.12		0.04		0.24				0.00			00.00		0.64		
Level Of Service Module:	ice Module:	-		-		-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Services	Modules	<u>:</u> :	1 1 1 1 1 1 1 1				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Delay/Veh:	91.7 91.7 91.7	86.3		20.8		21.8	0		13.6	•	19.2	0.0 0.0		0.0 24.0	24.0	19.5 7.4	7.4
User DelAdj:	1.00 1.00 1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00				1.00		-	н.	1.00 1.00	1.00	~	~
Queue:						1 1	1 1 1	o Adjuel/ven: 1 Queue:		0.0	2.61	0.0	0.0	0.0 24.0	0.42	19.5 7.4	4.7
******	**********	* * * * * * * * * * * * * * * * * * * *	***	* * * * * * * * * * * * * * * * * * * *	****	* * * * * * * * * *	* * * * * * * *	***	* * * * * * *	****	* * * * *	*****	* * * * * *	* * * * * * * * * * * *	* * * * *	* * * * * * * *	* * * * * * * * * * * * * * * * * * * *

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		FISCO,	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	t Vision 2000 ed Harbor Fi AM Peak Hour	00 EIS/ ill Alt	EIR ernati	ve							FISC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern AM Peak Hour	t Vision 200 ed Harbor Fi AM Peak Hour	00 EIS/ ill Alt r	SIS/EIR Alternative	ē,		
Level Of Service Computation Report 1994 HCM Operations Method (Puture Volume Alternative) Intersection #10 New Harbor/Mid Harbor Rd	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	evel Of gration cor/Mi	Level Of Service Computation Report perations Method (Puture Volume Alt	e Comput d (Futur	tation re Volu	Report	ernati	1 * ·		1 # ·	Level Of 1994 HCM Operation	1994 ******* ion #12	HCM O	Level C	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps	e Compu d (Futu	Computation Report (Future Volume Alternative)	Report	ernativ	* ;	
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh) Optimal Cycle: 94	10 10	(Y+R =	OCTITICAL VOL./CAP. (X): 8 (Y+R = 4 sec) Average Delay (sec/veh): 4	Critic Averag Level	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	./Cap. iy (sec vice:	(X): :/veh):		0.888 25.1 D		Cycle (sec): Loss Time (sec Optimal Cycle:	(sec): Time (sec): nal Cycle:	100 : 10 (Y+ 70	00 10 (Y+R 70	4 sec	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	Critical Vol./Cap. Average Delay (sec. Level Of Service:	Vol./Cap. Selay (sec/Service:	(X): /veh):	***	0.525 16.6 C
Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R	North Bound L - T - R	ınd R	South	South Bound	л П	East Bound	ound - R	· _	West Bound	- e	Approach: Movement:	ົ .a -	North Bound	ound - R	South	outh Bound	_ 	East Bound	ınd R	West L .	West Bound
Control: Rights:	ote				<u>:</u>	i g H		Prot	Protected Include	1	Control: Rights:	<u>:</u>	rot		Prot	red	<u>'</u>	rot	1		Protected Include
Min. Green: Lanes:	10 0 0	20	ິດ ດີດ	000	°	20	1 0	10	2 0	٠ .	Min, Green: Lanes:	۸ -	0 0 0	1 0 7	0 1	0 1 0	20 10 0 1	0 1 1	1 70	1 0	20 1 1
Volume Module:				0 0		0	0	0	. 0	- 0	Volume Module Base Vol:	dule:	0 33	0	16 ,	28 47	7 48	394	438	. 0	300
j	1.00	1.00	1.00 1.00	1.0	1.0	1.00	1.00	-	1 00.	00.	Growth Adj: Initial Bse	j: 1.00 se: 0	ri .	1.0	1.00 1.	÷.	0 1.00	394	1.00	1.00 1.	1.00 1.00 300 9
Added Vol:		512	0 (399	099	17	0 0	Added Vol:			63	00	0 0		0 0	484	81	0 0
PasserByVol: Initial Fut:	368 0	512	00			o m	399	099	17	00	rasserbyvor Initial Fut		297 33	9	16			394	922	81 3	300
		1.00	1.00 1.00			1.00 1.00	1.00	٦,		1.00	User Adj:	1.00	<i>-i</i> -	1.00	1.00 1.00	1.00	0 1.00	1.00	1.00	1.00 1.	1.00 1.00
PHF Adj: PHF Volume:	368 0	512	0 1.00	٠.		0 3	399	660	17 1	90	PHF Volume:		4		16			394		81 3	
Reduct Vol:		0	0				0	0	0 !	0 (Reduct Vol					•	0 9		0 0		0 8
Reduced Vol:	368 0	512	0 6	-		0 0	399	1 00 1	17	0 0	Reduced Vol		1.00 1.00	1.00	1.00 1.	ri	۲.	1.00	1.00	81 3 1.00 1.	1.00 1.00
		1.00	1.00 1.00			1.00 1.00	1.00	8 8		8 8	MLF Adj:	1.03	3 1.00		1.001			1.00	1.05	1.00 1.	
.: -	368 0	512	0		_	E :	399	099	18	0 :	Final Vol	.: 3(306 33	:	16	28 47	7 48	394	968	81 3	315
Saturation Flow Module:	ow Module:	-		1	_		_	-		-	Saturation		Flow Module		_		=		-		
Sat/Lane:			1900 1900			1900 1900	1900			1900	Sat/Lane:				1900				1900		
Adjustment:		0.85	1.00 1.00			1.00	0.85			1.00	Adjustment				0.95				0.85		
Lanes: Final Sat.:	1.00 0.00 1805 0	1.00	0.00 0.00		0.00	1.00	1.00	1.00	3800	00.0	Lanes: Final Sat.:	2.00	00 0.34 10 588	1122	1.00 0.37	645 1084	3 1.00 4 1805	1900	3230	1805 36	1.94 U.Ut 3694 106
Ana	ysis Module		1 1				=		: :	- :	Capacity Analysis	Analysi				!	<u>-</u> '	1		, (
Vol/Sat:	0.20 0.00	0.42	0.00.00.0	00.00		00.00.00	0.75	0 . 3 . 0	90.	00.0	VOI/SAL: Crit Moves:	s:	90.0	9	***	*0.0		>	* * * * * * * *		
			0.00 0.00			0.00 0.28	0.28			0.00	Green/Cycle			0.2			0.1	0		0	
Volume/Cap:	0.89 0.00	0 '	.49 0.00 0.00	9	00.0 00	0.01	0 68.0	.89	0.01 0	0.00	Volume/Cap:	p: 0.64	34 0.25	0.25	0.08 0.22	0.2	2 0.14 -	0.44	0.64	0.45 0.	.23 0.23
Level Of Service Module:	vice Module:			0.0		0.0 16.8	35.6	9.9	3.1	. 0.0	Level Of Service Module Delay/Veh: 28.6 20.8	Service N	Module 6 20.8	e: 20.8	25.8 21.7	.7 21.7	7 21.8	11.6	13.5	28.6 13	13.7 13.7
		1.00	-	_		1.00 1.00	1.00	00		1.00	User DelAdj		1.00 1.00		1.00						
AdjDel/Veh:		6.4				0.0 16.8	35.6		3.1 (0.0	AdjDel/Veh:	N	8.6 20.8	20.8	25.8 21.7	.7 21.7	7 21.8	11.6	<u>س</u>	28.6 13	13.7 13.7
. 000	12 0	æ	0	0	0	0	13	19	0	0	Onene:		8	-	0	-	-	_	7.	7	9

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D-AM.CMD		Ď	Tue Nov 5, 1996 13:07:19	996 13	:07:19			Page	14-1	D-AM.CMD		•	Tue Nov	5, 1996	13:07:19			Page	15-1
		FISCO,	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	on 200 bor Fi k Hour	O EIS/E	rnativ	⊉					FISC	SCO/Port Reduced	t Vision 2000 ed Harbor Fill AM Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	EIR ernativ			1
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative #13 Adeline St./ 5th St./ I-880 SB Ramp	evel Oneration	Level Of Service Computation Report perations Method (Future Volume Alt	Comput.	ation Fe Volum	Report	port Alternative		*	1994 HCM Opera	1994 HCM	Level Of HCM Operations ************************************	Level Of Service Operations Method	ice Comp hod (Fut	Service Computation Report Method (Future Volume Alternative)	Report	rnative		1 * * * * * * * * * * * * * * * * * * *
Cycle (sec): Loss Time (sec): Optimal Cycle: 87 Level Of Service:	100 ec): 12 e: 87	100 12 (Y+R = 87	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	Critica Average Level C	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	/Cap. / (sec/ ice:	(x): veh):		0.838 24.3 C	Cycle (sec): Loss Time (sec): Optimal Cycle:		100 11 (Y+R = 4 Ser 71	* * * * * * * * * * * * * * * * * * *	* û	cal V cal V ge De	**************************************	(X): (veh):	* * * * * * 0 .	0.355 17.6 C
Approach: Movement:	North Bound	und - R	South Bound	ound - R	Ea:	East Bound - T -	nd R	West Bound	Bound R	Approach: Movement:		North Bound	Sou	South Bound - T - R	R	East Bound	nd R	West E	West Bound T - R
Control: Rights:	Protected Ovl		Protected Include		<u>:</u>	Split Phase Include		1 ~~	it Phase Include	Control: Rights:		ted	<u>:</u>	Protected Include	<u>:</u>	1111	se e		it Phase Include
Lanes:	0	200	6	0 7	. ה ה		0 0	1 0 0	, r	Min. Green: Lanes:		1 1 1	00	20	20 10	20	0 0	10 2 1 0 1	20 20 1 1 0
Volume Module:	:	_ : : : :	:	1 1 1 8	-			1	1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Volume Module	 ile:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					<u>-</u>		
Base Vol: Growth Adi:	0 0 1.00	1.00	72 109	165	256	51	0 0 .	0 169	364	Base Vol:	0 6	175 45	0 0	154	31 24	64.3		205 3	
Initial Bse:		0 (72 109			515		•	•	Initial Bse			0			43		3.0	1 115
PasserByVol:		0			0	00	0 0	0	00	Added Vol: PasserByVol		0 7.7 0	0 0	00	0 0	00	0 0	198	0 0
Initial Fut:		442	72 318				270			Initial Fut	0 :		0					m	1 115
User Adj: PHF Adi:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00		1.00	1.00 1.00	0.50	User Adj:	1.00 1	1.00 1.00	1.00	1.00 1.	1.00 1.00	1.00		1.00 1.00	
PHF Volume:	153		72 318					570		PHF Volume:	0		0		-	43	1.00.1	403 31	1 115
Reduct Vol:	0 0	0 4 4 0	0 0 0	0 2	0 256	0 [0 220	0 0	0 0	Reduct Vol:	0 0	0 0							
	1.00	1.00	1.00 1.00	_	-					PCE Adj:	1.00	1.00 1.00	1.00	1.00 1.	31 24 1.00 1.00	1.00	13	403 31 1.00 1.00	1 115
MLF Adj: Final Vol.:	1.00 1.00	1.00	1.00 1.05	1.05	1.10	1.10	1.10	1.00 1.05		MLF Adj:	1.00 1		1.00		-	1.05			
				- ;				,	- :		- :	173 340	1	162	33 25	4	14	403 31	1 115
n Fl		•					-			Saturation	Flow Module	ule:	- -		=		=		
Sat/Lane:	1900 1900	1900	1900 1900	1900	1900		1900	1900 1900	1900	Sat/Lane:			1900			1900		1900 1900	
	1.00		1.00 1.32		1.67			00.		Adjustment: Lanes:	0.00.0	1.07 1.93	0.00	1.66 0.	0.97 0.96	1.07	0.96 0	0.95 1.00	0.85
Final Sat.:	1805 1900	1615	1805 2376	1234	2890	574	1732	1805 1682		Final Sat.:			0			1955			
nal	ysis Module	=			-	! ! !	=	• • • • • • •		Capacity Analysis		Module:					-		
Vol/Sat:	0.11 0.08	0.27	0.04 0.14	0.14	0.10 0.10		0.17	0.32 0.11	0.11	Vol/Sat:		0.11 0.11	00.0	0.05 0.05	05 0.02		0.02 0	0.22 0.02	0.07
	0.22	0.58	0.10 0.20	0.20	0.20	0.20		0.36 0.36	0.36	Green/Cvcle:	00.00	0.22 0.22		0 0 0 0 0	00 0 00	* 0	• 00	***	
Volume/Cap:	0.89 0.36	0.47	0.40 0.70	0.70	0.49			0 6		Volume/Cap:	0.00		00.00			0.12			
Level Of Service Module:	rice Module:	=								Teyer Of Co	Cerrico Modul		=	1					1
Delay/Veh:	50.0 21.2	8.1	28.0 26.2	26.2	23.1	23.1 3	31.9 2	29.5 15.0	15.0		0.0 22.2	2.2 22.2	0.0	20.7 20.7	.7 21.2	21.2	21.2 12	2.0 9.3	8.6
			1.00 1.00	1.00	1.00			00		User DelAdj	1.00		1.00		1.00	1.00		7	Н
Adjuel/ven: Ouene:	50.0 21.2	8.1	28.0 26.2	2.6.2	23.1	23.1	31.9 2	29.5 15.0	15.0	AdjDel/Veh:	0.0	22.2 22.2	0.0	20.7 20.7	21.2	21.2	21.2	12.0 9.3	9.8
******	*******	*****		*****	****	* * * * * * * * * * * * * * * * * * * *	*****	******	* * * * * * * * * * * * * * * * * * * *	**************************************	· * * * * * * * * * * * * * * * * * * *	*******	> * * * * * *	4 * * *] *******	7 ***	* * * *	8	7
														:	:	:	1 2 1 1 1		

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D-AM.CMD	E	Tue Nov 5,		1996 13:07:19			Page	16-1	D-AM.CMD	:	£	Tue Nov	5, 1996	13:07:19	6		Page	e 17-1
	FISC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	t Vision 200 ed Harbor Fi AM Peak Hour	00 EIS/E ill Alte	SIR	; ; ; ;	1 1 1 1 1 1	i i i i			FISC	/Port V Reduced	FISCO/Port Vision 2000 Reduced Harbor Fill AM Peak Hour		EIS/EIR Alternativ	e S		
15	1994 HPM (printing Mother Curp Andrew Alternative Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.	CITS M. Ch.	M. thad thuture Volume Alt. NB Ramps / Frontage Rd.	re Volum					1994	994 HCM	Level Of Service Operations Method	Of Service lons Method	rice Compris	Level Of Service Computation Report HCM Operations Method (Future Volume Alternative) ***********************************	Report ume Alte	ernativ	(0)	*
cycle (sec):	Cycle (sec): 100 Critical Vol./Cap. (X):	* * * * * * *	Criti	Critical Vol./Cap.	/Cap. ((x):	*********	0.565	Cycle (sec): 100 Critical Vol. (20p. (X):	* "	100	* (Crit	Critical Vo	Vol./Cap.	(X):	*****	0.414
Loss Time (sec): Optimal Cycle:	7): 10 (Y.R. 7):	4 sec	4 sec) Average Delay (sec/ve) Level Of Service	Average Delay (solevel Of Service	r (Serriva Aler	(dea)	21.3 C	21.3 C	Loss Time (sec) Optimal Cycle:	*	5 (Y+K 35 ***********	1 + 2 + 1 +	Sec) Aver	<pre>4 sec) Average Delay (sec/ven) Level Of Service: ************************************</pre>	4y (sec/ rvice:	ven):	* * * * * * * * * * * * * * * * * * * *	****** *********
Approach: Movement:		South	South Bound		East Bound T -	~	West Bound L - T -	ound - R	Approach: Movement:	North Bound L · T ·	Bound - R	Soul	South Bound	۳. ت	East Bound - T -	und - R	West L - '	West Bound - T - R
Control:	Protected	Prot	Protected		Protected	<u>-</u> - -	Protected	 ted	Control:	Protected Include	otected Include	Pre	Protected Include		Protected	 ed 3e	Prot	Protected Include
kignes: Min. Green: Lanes:	10 20 20 2 0 0 1 0	100	20 20	10	20	20	0 20	20	Min. Green: Lanes:	0 0	0 0	00	000	0	0 20	20	10	20 20 2 0 0
Volume Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		:	<u>:</u>		<u>-</u>	:	-	Volume Module	:		<u> </u>		-	1 1	= '		
Base Vol: Growth Adj: 1	0 548 21 .00 1.00 1.00	1.00 1.00	00 1.00		0 16 1.00 1.00 1	1.00 1	0 62	1.00	Base Vol: Growth Adj:	1.00 1.00	1.00		-	0 0 0.00	1.0		1.00 1.00	00 1.00
Initial Bse:	0 548 21	17	94	0 4 0	16	00	0 62	чС	Initial Bse:	o c	00	0 0	00	0 0	318	0	65 0	0 18
PasserByvol:	. 0	0	ń		. 0	0		0	PasserByVol:		0	0	0	. 0		0	0	0
	697 548 21	17	0 459		314 20	0 0 0	0 81	1 00 1	Initial Fut: Hser Adi:	0 1 00 1	0 0 0	1.00	0 1.	0 0	0 318	605	65 1081	81 0 00 1.00
		1.00		1.00	1.00		-		PHF Adj:	.00 1.0		1.00		-	0 1.00			_
PHF Volume: Reduct Vol:	697 548 21 0 0 0	17	0 459	314	20	00	0 81	H 0	PHF Volume: Reduct Vol:	00	00	00	00		318	605	65 1081 0 0	0
						0		1	Reduced Vol:			0		•				•
PCE Adj: 1	1.00 1.00 1.00	1.00	1.00 1.00	0 1.00 1.00		1.00 1	.00 1.00	1.00	PCE Adj: MLF Adi:	1.00 1.00	1.00	1.00	1.00 1.	1.00 1.00	1.00	1.00	1.00 1.00	00 1.00 05 1.00
	548	17		-	21	0		٦,	Final Vol.:		0 0	0 _		_	0 334	_	67 1135	
Saturation Flo	Flow Module:	-	1	-	1	<u>-</u>	; ; ; ; ;	1 1 1 4	Saturation Flow Module	ow Modul	- 1 1 1 1 1 1 1 1 1 1 1			<u>-</u>		-		
	1900 1900 1900 0.95 0.99 0.99	1900	1900 1900	0 1900	1900	1900 1	900 1900	1900	Sat/Lane: Adjustment:	1,00 1,00	1900	1900	1900 19 1.00 1.	1,00 1,00	1900	1900	1900 1900 0.95 1.00	00 1900 00 1.00
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	0.28 0.38 0.38	0.10	0.00 0.42	2 0.22	0.42	0.00	.00 0.20	0.20	••	0.00 0.00	0.00	0.00	0.00 0.00	0.00 0.00	0.85	0.85	0.10 0.95	31 0.00
$\overline{}$		} =	:	=		_		-				<u>:</u>				=		- ;
Level Of Service Module: Delay/Veh: 22.5 22.0	ice Module: 22.5 22.0 22.0	26.4		31.2	11.0	0.0	0.0 21.2	21.2	2	ice Modul	••	0.0			8.0		26.7 0	
User DelAdj: 1	1.00 1.00 1.00	1.00 1	1.00 1.00	31.2	1.00	1.00 1	0.00 1.00	1.00	User DelAdj: AdiDel/Veh:	1.00 1.00	0 1.00	1.00.1	1.00 1.	1.00 1.00	1.00	1.00	1.00 1.00 26.7 0.1	0.1 0.0
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; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	-	Reduced Harbor Fill Alternative AM Peak Hour	Reduced Harbor Fill Alternative AM Peak Hour			<u>.</u>	ISCO/Port Reduce A	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern AM Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour	ive		
195 ************************************	Level C	Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative) Intersection #17 14th St./ I-880 Frontage Rd.	ation Report re Volume Alterna	tive)	Intersection	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #18 W.Grand Ave./ I-880 Frontage Rd.	Level Of Service Operations Method	Service Computation Method (Future V	Of Service Computation Report ons Method (Future Volume Alternative)	t ternativ	:	1 * 1 * 1 * 1 * 1 * 1
Average Delay (sec/veh):	(sec/veh):	Average Delay (sec/veh): 3.0 Worst Case Level Of Se	Worst Case Level Of Service:	f Service: C	Cycle (sec):	100	*	********* Criti	**************************************	(x):	* * * * * * * * * * * * * * * * * * * *	0.456
Approach:	North Bound	South Bound	East Bound	West Bound	Loss Time (sec): Optimal Cycle:): 11 81.	II 4.	sec) Avera	sec) Average Delay (sec/veh) Level Of Service:	c/veh):	2	21.7 C
Movement:	L - T - R	T - 1	L - T - R	L - T - R	*******	***************************************	* * * * * *	******	***************************************	****	*****	* * * * *
- 	Uncontrolled		_	Stop Sign	Movement:	L - T -	۳ : ت	south Bound	East Bound	ound - R	West Bound	Bound - R
kignes: Lanes:	0 0 1 1 0 0	1 0 2 0 0	0 0 0 0 0	1 0 0 0 1	Control:	Split Phase	 	Split Phase	-	ted	Protected	cted
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Added Vol:	314	0 365	0	0	Base Vol:	0 6	0 678	84	6 65 234	12	0 152	0 449
PasserByVol:	0	0	0	0	Growth Adj:	1.00	٦	1.00 1.0	1.001	٠	-	-
<u>ب</u>		30 365	0 0	140 0	Initial Bse:	0		48	65		0 152	
User Adj: 1	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00	Added Vol:	162		193	0		æ	_
<u>е</u> :		30 365	00:1	140 100 1	Initial Fur:	0 0	152 678	0 241	0 0 0	٥ ز	ט ט ט	
Reduct Vol:	0	0	0	0	User Adj:	1.00	٦	1.00 1.0	1.00	1.00	-	1.00
Final Vol.:	0 314 89	30 365 0	0 0	140 0 6	PHF Adj:	1.00		1.00 1	1.00	1.00	1.00 1.00	
Adjusted Volume Module:	ne Module:	;	;		PHF Volume:	162	67	241	65	12	172 233	
Grade:	*0	*0	*0	Ö	Reduct Vol:	0		0	0			
* cycie/cais:	****	XXXX XXXX	XXXX XXXX	XXXX XXXX	nce ndi	162		241	65	12	172 233	
PCE Adi: 1	=	1.10 1.00 1.00		1.10 1.10 1.10	MLF Adj:	1.00 1.00 1.	1.00 1.00	1.00 1.00	0 1.00 1.00	1.00	1.00 1.00	
PCE:	xxxx xxxx	xxxx xxxx	XXXX XXXX		Final Vol.:	170		241		13	172 256	01.1
Trck/Cmb PCE:	xxxx xxxx	xxxx xxxx	xxxx xxxx				_	1 1		1	- :	- ;
Adj Vol.:	0 314 89	33 365 0	0 0 0	154 0 7	Saturation F	Flow Module:	=		-	=		
Critical Gap Module:	dodule:				Sat/Lane:	1900		1900	1900	1900	1900 1900	1900
veUp Time:xx	MoveUp Time:xxxx xxxx xxxxx	2.1 xxxx xxxxx	2.1 xxxx xxxxx xxxxx xxxx xxxx	xxxx 2.	Adjustment:	0.93	0	1.00	0.95	0.99	0.95 0.90	06.0 0
ntical Gp:xx	Critical Gp:xxxxx xxxx xxxxx	5.5 XXXX XXXXX XXXX	XXXX		Lanes:	1.03		0.98 0.	1.00	0.08	1.00 1.02	1.98
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flict Vol. x	Cupucity Course.	403 xxxx	*****	.00								:
tent Cap.: x	Potent Cap.: xxxx xxxx xxxxx	1042 XXXX XXXXX		49 xxxx	Vol/Car: 0 00	Module					,	
Adi Can: x	XXXXX XXXX XXXX	1.00 xxxx xxxxx	*****	****	Contraction.	60.0	>	7.0 51.0	5 0.04 0.09	60.0	0.10 01.0	0.15
•	XXXX XXXX XXXX	1042 xxxx xxxxx	*****	XXXX 8	Cric Hoves:					(
7				2222	Volume/Can.	0 02 0 02 0	0.20 0.34	0.34 0.34	# 0.10 0.23	0.23	0.12 0.25	
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opped Del:xx	Stopped Del:xxxxx xxxx xxxxx	3.6 xxxx xxxxx	3.6 xxxx xxxx xxxxx xxxxx	18.1 xxxx 3.3	Level Of Service	vice Module:	-		-			
LOS by Move:				٠ ،	Delay/Veh:	20.8 23.2 23	23.2 18.0	16.3 16.3	3 27.7 20.9	20.9	42.1.21.7	7 21 7
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	User DelAdi:			1.00	00	00		
nared Cap.: x	Shared Cap.: xxxx xxxx xxxxx	XXXX XXXX XXXX	xxxx xxxx xxxx	xxxx xxxx xxxx	AdiDel/Veh:	23.2		16.3	27 7	20.0		
ird StpDel:xx	XXXXX XXXX XXX	Shrd StpDel:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxx	XXXXX XXXX XXXXX	XXXX	Ollene			, ,				
Shared LOS:		•	*	*	*********	*	\ T	•	7	1	9	
AnnroachDel:	c	ć										

D-PM.CMD	Tue Nov 5, 1996 10:50:38	996 10:5	0:38			Page 1-1	-1	MO - C		Ę		10.50.3	α		Ded	. 5-1 apad
	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	t Vision 2000 ed Harbor Fill PM Peak Hour	EIS/EIR . Altern	ative						.ISCO/Pc	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative	000 EIS	/EIR	, o		
	Trin Generation Report	rion Ren	, , , , ,	1	! ! !	! ; ; ; ;	1				FIR FERN DO	770			1	
	forecast for PM Peak Hour	. PM Peak	Hour					Zone # Subzone	Amount	Units	Re	Rate Ra In O	Rate T Out	Trips Trips In Out	os Total Trips	al % Of ps Total
Zone # Subzone	Amount Units	Rate	Rate	Trips	Trips Out	Total & Of Trips Total	% Of Total	Zone	Zone 28 Subtotal					264 31	; 49	580 10.3
1 New Harbor Zone 1	1088.00 Employees Subtotal	90.0	0.22	65	239	304	4. 4.	TOTAL						2325 3326	;	5651 100.0
3 J.I.T. Zone 3	343.00 Employees Subtotal	0.10	0.36	34	123	157	2 . 8 2 . 8									
6 Middle Harbr Zone 6	e Harbr 516.00 Employees Zone 6 Subtotal	90.06	0.22	31	114	145 145	2.6									
7 7th St Harbr Zone 7	t Harbr 613.00 Employees Zone 7 Subtotal	0.06	0.22	37	135	172	3.0									
8 Outer Harbor Zone 8 S	Harbor 706.00 Employees Zone 8 Subtotal	90.06	0.21	42.42	148 148	190	ы ы 4. 4.									
10 New Park 2one 10	ark 1.00 Total Trips Zone 10 Subtotal	55.00	96.00		96	151	2.7									
11 New Harbor Zone 11	1.00 Trucks Inter 1 Subtotal	229.00	229.00 274.00	229	274	503	8 8 6 6									
16 Middle Harbr 20ne 16	r 1.00 Trucks Inter 6 Subtotal	109.00 130.00	130.00	109	130	239	4 4 .2 .2									
17 7th St Harbr Zone 17	r 1.00 Trucks Inter 7 Subtotal	129.00	129.00 155.00	129	155	284	. v. v.									
18 Outer Harbor Zone 18	Harbor 1.00 Trucks Inter Zone 18 Subtotal	148.00	148.00 178.00	148	178	326 326	7. 7. 8. 8.									
21 New Harbor Zone 21	1.00 Truck External 407.00 488.00 1 Subtotal	.1 407.00	488.00	407	488 488	895 895	15.8 15.8									
23 J.I.T. Zone 23	1.00 Truck External 3 Subtotal :	1 353.00 423.00	423.00	353	423	776 776	13.7									
26 Middle Harbr Zone 26	e Harbr 1.00 Truck External Zone 26 Subtotal	1 193.00	232.00	193	232	425	7.5									
27 7th St Harbr Zone 27	r 1.00 Truck External 229.00 275.00 7 Subtotal	1 229.00	275.00	229	275	504	8 8 6.8									
28 Outer Harbor	r 1.00 Truck External 264.00 316.00	1 264.00	316.00	264	316	580	10.3									
Traffix 6.8.030	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc.,	oc. Lice	nsed to	Dowling	Assoc	., Oakland	and	Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	306 (c) 19	96 Dowl	ing Assoc.	License	d to Dov	ling Ass	oc., 0	ıkland

D-PM.CMD

## Reduced Hambound Tolume Northbound Southbound Type Left Thru Right Left Thru Right ### Maritime St./ Burma St. Base 0 414 28 105 132 0 ### Maritime St./ 14th St. ### Maritime St./ 7th St. Extension Base 0 414 28 105 132 0 ### Maritime St./ 7th St. Extension Base 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 0 0 0 ### Added 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	Turning Movement Report	for nout. Facthound thouthouse	Left Thru Right Lef		0 0 0 05 0 0 0	90 158 0		0 0 0 0 92 0 290	96 99		226 229 0 823 0 0	301 452 0 897 0 0 0		0 0 0 0 0	423 0 0 281 489	453 606 423 0 0 281 ,489	0 0 215 131 94 88 0	0 416 0	0 0 848 I3I 94 504	00 61 11 06 31		15 30 14 13 89 39 78		0 0 0 0 0 0 1	15 289 446 0	0 0 646 15 289 446			0 0 0 15 289 412 4 0 1721 0 0 0 15 289 412 4 0 1721	-RBO Bamps	3 23 20 454 210 0 624 13 1309	
	FISCO/Po	Turn	Northbound	Left Thru Right Lef	aritime St./ Burma	5 590 0 0	5 945 0	aritime St. / 14th St.	298 258 105	298 672 28 105	aritime St./ 7th St.	768 327 0 0 30	804 327 0 0	13 446 / 15	o o o o 31	0 0 0 674	0 0 0 705	95 0 229 0	0 0 0 0		deline St./ 3rd St. 36 0 122 43	0 979 0	36 979 122 43	#9 7th/Middle Harbor Rd	0 0 0 0	4 0 383 0	0 383 0	wew harbor/Mid harbor Kd	383 0 618	383 0 618 0	St. / W.Grand Ave. /	, 0 0 , 60 0	0 22 0

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Zone

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D-PM.CMD			Tue	Tue Nov 5	5, 1996 10:50:38	10:5	0:38			ρĭ	Page 3-	-2	D-PM.CMD	Q			Tue	Tue Nov 5,	1996	1996 10:50:38	:38			Page	e 3-3	
1		 	FISCO/ Re	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	t Vision 2000 ed Harbor Fi	2000 Fill	EIS/E: Alte	IR rnative	1	1 (() ()	! ! !	: : :	1	1 1 1 1 1	, 1 1 1 1	1 <u>fr</u> 1 1 1	ISCO/I	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	t Vision 200 ed Harbor Fi PM Peak Hour	2000 E. Fill /	IS/EIR Altern	ıtive				
Volume No Type Left	Northbound Left Thru Right	:	Sou Left T	Southbound Eastbound Left Thru Right Left Thru Right	d ght L	Eas left T	Eastbound t Thru Ri		Wes Left T	Westbound Left Thru Right		Total Volume	Volume Type	Northbound Left Thru Right	Northbound t Thru Rig	;	Sou eft T	Southbound Left Thru Right	1	Eastbound Left Thru Right	Eastbound t Thru Rigl		Westbound t Thru Ri	Westbound Total Left Thru Right Volume	Total t Volume	al
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Total 251 194 #14 Union St./ 5th	194 :./ Sth	534 St./	0				72/	191	555		9 1	5 F	#160	1 '		,	, ,	, ,	, (, ,	, ,			·	ſ	3
Base 0 Added 0 Total 0	194 0 194	281 161 442	000	144 0 144	30 0	31 0	97 0 76	18 18	32 251 283	31 31	34 0 34	892 412 1304	Base Added Total	000	000	000		000	000	000	000	0 95	, w	31 72) D O	426
#15 7th St./ Base 0	/ I-880 197	I-880 NB Ramps / 197 3 2		ıta	ige Rd. 205	0	108	0	0	53		569	#161 Base	0	0	0		-105	0	0	•	0.0	0	0	,	255
1 47		0 m	0 7	00	288	417	17	00	00	58	о п	1204 1773	Added Total	00	00	00	00	95 -10	00	00	0 0	178 28	00	00	0 0	273
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t t	./ I 6 41 47	130 130 130		Rd. 0 288 288	000		000	000		000	101	318 705 1023	#170 Base Added Total	000	-205 251 46	-391 478 87	000	000	000	000	000	000	000		0 -5	596 729 133
#18 W.Grand Base 75 Added 0 Total 75	Ave./ 72 183 255	I-880 Frontage Rd 0 759 0 234 0 128 234 759 128	Fronta 759 0 759	age Rd. 0 128 128	60	98 98	277 74 351	мом	0 159 159	456 51	330 330	2064 830 2894	#177 Base Added Total	000	000	000	000	-214 265 51	000	0 -163 0 155 0 -8	. 55 3 8 5 5 3	000	000	000	0 0 -3	377 420 43
#134 Base 0 Added 0 Total 0	000	0 615 615	000	000	000	. 000	0 546 546	000	0 737 737	0 387 387	000	0 2285 2285	#178 Base Added Total	000	-323 387 64	000	000	000	000	-116 88 -28	-47 67 20	000	000	000	6 - 4 0 5	-486 542 56
#138 Base 0 Added 0 Total 0	-168 0 -168	000	000	-123 0 -123	-24	-20	000	000	000	000	000	-335 0 -335	#182 Base Added Total	000	-439 476 37	000	000	000	-297 325 28	000		000	000	000	7 - 0 0 8 0	-736 801 65
#158 Base 0 Added 0 Total 0	-259 331 72	-163 155 -8	000	000	000	000	000	000	000	000	000	-422 486 64	#201 Base Added Total	000	000	000	000	000	000	0 -104: 0 1197 0 154	-1043 1197 154	000	000	0 0	0 -1	-104 1197 154

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	:			FISC	O/Port Reduce	FISCO/Port Vision 2000 BIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	on 200 bor Fi k Hour	00 EIS	/EIR ternat	ive			1 1 1	! ! ! !	; ; ; ; ; ; ;	! ! !	FISC	0/Port Reduced	t Vision 200 ed Harbor Fi PM Peak Hour	2000 or Fil Hour	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	ative	1	1		:
e e	No Left '	Northbound Left Thru Right	und Right	S.	Southbound Left Thru Right	ound Right	:	Eastbound t Thru Ri	Eastbound Left Thru Right	:	Westbound t Thru Rig	nd Right	Westbound Total Left Thru Right Volume	Volume Type	Northbound Left Thru Right	und Right	S	Southbound Left Thru Right	ınd light	Ea. Left	Eastbound Left Thru Right	1	Westbound Total	und Right	Total	al
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Added Total	00	00	00	414	783 115	00	00	0 0	00	00	0 0	00	1197	Added Total	00	00	00	00	-302	0 -226	0 -44		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000		609-
#207 Base		-46٦	c	c	c	c	c		c			7	ŗ													3
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#218 Base Added Total	000	-39 22 -17	000	000	000	000	-31 50 19	-16 16 0			000	000	9 8 8 8 8 8											-		
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D-FM.CMD	<u> </u>			£	ue Nov	Tue Nov 5, 1996 10:50:38	96 10:	:50:38				Page 4	4-1	D-PM.CMD	MD Q			2	Tue Nov	5, 1996		10:50:38				Page	4-2
				FISC	5/Port	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern PM Peak Hour	n 2000 or Fil Hour	D EIS/	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	ē.	,							FISCO	SCO/Port \Reduced	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	2000 r Fill Hour	EIS/EIR 1 Altern	IR	φ.			
, 4 4 1			• :		1 2 2	Univ Volume Feport FM Feak Hour	Hour		•				· · ·	Volume Type	In	NB Link Out To	nk Total	E	SB Link Out To	nk Total	H H	EB Link Out To	nk Total	f	WB Link Out To	tal	Total
Volume	Ë	NB Link Out To	ink Total	I	SB Link Out To	ink Total	ä	EB Link Out To	nk Total	In	WB Link Out Tot	al	Total Volume	#13 Ad	Adeline	St./5	5th St.	./ I-880 SB		Ramp							
147	i																0	310		1064	295	271	995	818	398	1216	2846
#3 Maritime	itime.	U2	Burma	St.										Added	979		1620	124	194	318	161	251	412	355	534	889	3239
Ваѕе	595					663	0.5		,	o	,	9	1508	Total	979	640	1620	434	948	1382	456	522	978	1173	932	2105	6085
Added	355	210	565	300	513	813	158	06	246	o c	0 0	0 6	1625	S agial At#	900	, t+	, to	1.000	Morrh	Ocean							
10041	000					7161	0 0	0	200	>	o	•	1616	TAN OIL	475	194		174			146	61	207	47	378	475	1784
#4 Maritime	itime	St./	14th St	<u>بر</u>										Added	191	251	412	0	0	0	0	; 0	0	251	161	412	824
Base	442		999			941	0		0	382	133	515	2122	Total	989	445	1081	174	259	433	146	61	207	348	539	887	2608
Added	556			210	355	595	484		848	0	0	0	2499				!										
Total	998	754	1752	447	447 1059	1506	484	364	848	362	133	515	4621	#15 701		<u> </u>	e d	Ramps /	Fronta	age Rd	•		ì	i		,	•
1	1			ć	:									Base	200	o c	700	200	198	405	108	258	366	Ն 4- ո	113	167	1138
#5 Maricime	3.c	7.78		/cn St. Extension	1015115	298	297	111	408	c	c	c	816	Toral	478	0 0	4 / 0 6 7 B	495		1110		1028	1570	n or	130	189	3546
Added		-		u		1086	1052		2046	0	0		5353	3))	•)	١.		,))	ì) 1	1
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#6 7th St./	St./		7th St. Extension	ension	,									Added	0	663	663	0	0	0	1097		1867	770	434	1204	3734
Base	0			31	0	31	0	0	0	0	31	31	62	Total		1048	1048	0	0		1104	770	1874	1148	434	1582	4504
Added	0	0	0	1127	1127 1094	2221	1029	735	1763		1097	1867	5851														
Total	0			1158	1094	2252	1029		1763	770 3	1128	1898	5913	7	끕	_	I-880 Frontage		Rd.						•		
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Base	324	22	54	0	0	0	346		529	182	4	626	1704	Total	609	403	1012	292	486	778	0	0	0	122	134	256	2045
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#9 7th	/Midd	le Ha	#9 7th/Middle Harbor Rd	_										Added	615		1352	0	0	0	546	387	933		1161	2285	4570
Base	0	0	0		1	7	0	0	0	г	0	7	7	Total	615	737	1352	0	0	0	546	387	933		61	28	4570
Added	387	30	69	0	0	0	661	450	1111	735 102	6	1763	3565														
Total	387			0	-	-	661	450	1111	736 1	6	1764	3567	#138													
														Base		-123	-291		-188	-335	-20	-24	-44	0	0	0	-670
#10 Ne	w Harl	bor/M	#10 New Harbor/Mid Harbor	24										Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Base	0	0			0	0	0	0	0	0	0	0	0	Total	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670
Added	1001		1702	0	٥	0	304	387	069	416	633	1050	3442														
Total	1001	701			0	0	304	387	690	416	633	1050	3442	#158													
														Base	-422	0	-422			-259	0	0	0			-163	-844
#12 Ma	#12 Maritime	e St./	/ W.Grand	and Ave	3./ I-	./ I-880 Ramps	sdu							Added	486	0	486	0	331	331	0	0	0	0	155	155	971
Base	23			un		111	684	647	1331	637		1100	2798	Total	64	0	64	0	72	72	0	0	0		8	8	127
Added	513			0	0	0	249	439	687	51		125	1625														
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· · · · · · · · · · · · · · · · · · ·	, ; ; ;		FISC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	t Vision 200 ed Harbor Fi PM Peak Hour	1 2000 or Fill Hour	EIS/EI Alter	R native	† † † †	1 1 1 1 1				FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern PM Peak Hour	t Vision 200 ed Harbor Fi PM Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	IR rnative		; ;
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													# 5 Maritime St./	5 Maritime St./ 7th St. Extensio	B 5	5.8 0.080	B 14.0 0.695	+ 8.229 D/V	2
													# 6 7th St./ 7th St. Extension	t. Extension	C 20	20.9 0.000	B 14.7 0.670	-6.129 D/V	2
													# 8 Adeline St./ 3rd St.	3rd St.	C 20	20.4 0.084	F 72.1 0.668	+51.744 D/V	>
													# 9 7th/Middle Harbor Rd	cbor Rd	C 15	15.8 0.000	C 17.2 0.630	+ 1.404 D/V	^
													# 10 New Harbor/Mid Harbor Rd	l Harbor Rd	0	0.0 0.000	C 16.3 0.673	+16.281 D/V	>
													# 12 Maritime St./ W.Grand Ave./ I-	W.Grand Ave./ I-	B 12	12.4 0.237	C 18.8 0.410	+ 6.398 D/V	>
													# 13 Adeline St./ 5th St./ I-880 SB	th St./ I-880 SB	C 17	17.6 0.328	D 30.8 0.510	+13.115 D/V	>
													# 14 Union St./ 5th St./ I-880 Nort	1 St./ I-880 Nort	В 12	12.5 0.178	C 16.8 0.227	+ 4.359 D/V	>
													# 15 7th St./ I-880	7th St./ I-880 NB Ramps / Fron	В 11	11.5 0.135	C 18.7 0.426	+ 7.286 D/V	>
													# 16 7th St./ I-880 SB Ramps) SB Ramps	A 2	2.6 0.113	B 5.6 0.550	+ 3.004 D/V	>

2.3 0.000 + 0.000 V/C C 22.8 0.658 + 1.696 D/V

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1.9 0.000

18 W.Grand Ave./ I-880 Frontage R C 21.1 0.505

17 14th St./ I-880 Frontage Rd.

D-PM.CMD	Ē	Tue Nov 5, 1996 10:50:39	6 10:50:	39		Page	6-1	D-PM.CMD		Tue	Nov 5,	1996 10:	10:50:39		Page	Je 7-1
	FISC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	r Fill A Hour	S/EIR lternativ	δ					FISCO/Port Reduced	/Port Visi educed Har	t Vision 2000 ed Harbor Fill PM Peak Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	ive	; ; ; ; ; ; ;	1 1 1 1 t 1 1
1994 HCM operations Marthod (Future Volume Asternative Intersection #3 Maritime St./ Burma St.	HCM of erallicant	level of Service Computation Feg it 1994 HCM speciations Method (Future Volume Asternative 183 Maritime St./ Burma St.	mputatio	n Feg 17 lume Aste	12 Load 2 V C			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #4 Maritime St./ 14th St.	1994 HCM OF	Level Of perations	Level Of Service Operations Method	Computation (Future Volu	Computation Report (Future Volume Alternative)	ternati:		
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 8 (Y·R =	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service	Critical Vol./Cal Average Delay (so Level Of Service	Critical Vol./Cap. (X): Average Delay (sec/v+h) Level Of Service	(X): 'veh):	0.318 9.4	.318 9.4 H	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 ec): 8 e: 58			Critical Average I Level Of	Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): c/veh):	* * O	0.760 19.8
-	North Bound	South Bound	ind R L	East Bound	ind R	West Bound L - T -	ound - R	Approach: Movement:		ound R	South Bound L - T -	▶ 02	East Bound	ound R	West I	**************************************
Control: P. Rights:	Protected Include	Protected Include		Protected Include	 g	Protected Include	red Led	Control:	 Protected Include	ed ide	Protected Include	ted ted ude	Permitted Ov1	tted	Perm	Permitted Include
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	5 590 0 1.00 1.00 1.00	1.00 1.00	1.00 1.0	1.00 1.00	1.00 1	.00 1.00	1.00	Base Vol: Growth Adj:	0 414 1.00 1.00	1.00	105 132 1.00 1.00	1.00	0 0 1.00 1.00	1.00	92 1.00 1.0	0 290
Initial Bse: 5 Added Vol: 0	355 0	0 109	90	0 0 158 0	20	00	00	Initial Bse: Added Vol:	0 414	78	105 132	0 9	0 86	0 28.2	92	0 290
	0 !				0		0	PasserByVol:		0				0	. 0	
Initial Fut: 5 User Adj: 1.00	5 945 0 1.00 1.00 1.00	1.00 1.00	1.00 1.0	1.00 1.00	1.00 1	.00 1.00	1.00	Initial Fut: User Adj:	298 672 1.00 1.00	1.00	105 276	1.00	98 0 1.00 1.00	387	92 1.00 1.0	0 290
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MLF Adj: 1.00 Final Vol.: 5	1.00 1.05 1.05 5 993 0	1.00 1.05 0 335	1.05 1.0 95 19	1.00 1.00 158 0	1.00 1	00 1.00	1.00	MLF Adj: Final Vol.:	1.00 1.05 298 705	1.05	1.00 1.05 105 289	-	1.00 1.00 98 0		1.00 1.00 92 0	
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Lanes: 1.00 Final Sat.: 1805	1.00 2.00 0.00 1805 3800 0	1.00 1.56 1900 2872 '	0.44 1.00 814 1805	0.00	1.00 0 1615	00.000.00	00.0	Lanes: Final Sat.:	1.00 1.92 1805 3613	0.08	1.00 1.61 1805 2976	0.39	0.20 0.00 224 0	0.80 886	1.00 0.00 760 0	0 1.00 0 1615
Capacity Analysis Module:	Module: 0.26 0.00	0.00 0.12		0.00	0.03 0	00.000.	00.00	Capacity Analysis Vol/Sat: 0.17	lysis Module	e: 0.20	0.06 0.10	0.10	0.44 0.00	0.44	0.12 0.00	0 0.18
Green/Cycle: 0.24 Volume/Cap: 0.01	0.62 0.00	0.00 0.48	0.48 0.20 0.24 0.44	00.00	0.20 0	00.000.	00	<pre>Crit Moves: Green/Cycle: Volume/Cap:</pre>	0.20 0.27 0.84 0.74	0.27	**** 0.13 0.20 0.44 0.49	0.20	**** 0.52 0.00 0.84 0.00	0.72	0.52 0.00 0.23 0.00	0 0.52 0 0.34
Level Of Service Module Delay/Veh: 18.7 6.4 User DelAdj: 1.00 1.00 AdiDel/Veh: 18.7 6.4	rice Module: 18.7 6.4 0.0 1.00 1.00 1.00 18.7 6.4 0.0	1.00 1.00	9.9 23.2 1.00 1.00 9.9 23.2	0.0	21.4	0.0 0.0	0.0	Level Of Serv Delay/Veh: User DelAdj:	Of Service Module Veh: 35.7 23.7 PelAdj: 1.00 1.00	23.7 23.7 1.00 23.7	26.7 23.3 1.00 1.00	23.3	20.3 0.0	5.5	8.4 0.0	0 9.1
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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	! ! ! ! !	FISCO,	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	t Vision 2000 ed Harbor Fi PM Peak Hour	00 EIS/	EIR ernati	, A	1 1 1 1 1 1				FISCO,	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Altern PM Peak Hour	on 2000 bor Fil k Hour	O/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	ive			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #5 Maritime St./ 7th St. Extension	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ## Maritime St./ 7th St. Extension	evel Of eratior	Level Of Service Computation Report perations Method (Future Volume Alt	Comput (Futur	tation re Volu	Report	ernatî	* * * * * * * * * * * * * * * * * * * *	1 4 4 4 1 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)	Level Of Service 1994 HCM Operations Method ************************************	Level Of S Operations	vel Of Service Comrations Method (Furthern Service)	Compute (Future	Service Computation Report Method (Future Volume Alternative)	ternati		* * *	
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 48	100 ec): 8	(Y+R =	4 sec)	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	Critical Vol./Cap Average Delay (se Level Of Service:	Critical Vol./Cap. Average Delay (sec/ Level Of Service:	(X): /veh):		0.695 14.0 B	Cycle (sec): Loss Time (sec): Optimal Cycle:	 (6	(Y+R =	4 sec)	Critica Average Level (Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	(X): c/veh):	0.0	0.670 14.7 B	:
Approach: North Bound South Bound East Bound Movement: L - T - R L - T - R L - T - R	North Bound L - T -	und - R	South Bound	Bound L - R	n B	East Bound	und - R		Bound F - R	Approach: Movement:	2 1	und R	South Bound L - T -	ound - R	East Bound L - T -	ound - R	West I	West Bound - T - R	
Control:	Protected		Protected	scted	<u>-</u>	Protected	 ed	Protected	otected	Control:	Protected	pa	Protected	ted	 Protected Include	red red	Protected	cted	<u>-</u>
Kignts: Min. Green: Lanes:	10 20 2 0 2 0	000	000	20 20 20 1	10	500	20		0 0	Min. Green: Lanes:	0 0 0	00	10 0	20	10 20	0 0	0 0 1	20 20 1 1 1	0.
a lubom amulou		=		1			-		-	Volume Module				-			-		<u>-</u>
Base Vol:	36 0	0				0	74			Base Vol:		0 6	31 0		۰ ,	0 6	0 0		0 9
Growth Adj: Initial Bse:	1.00 1.00 36 0	1.00	1.00 1.00 0 0	00 1.00		1.00 1.00 223 0	1.00	1.00 1.00 0 0	0 1.00	Growth Adj: Initial Bse:	0 0 0	00.1	31 0	-	0.7		-1	-	2 0
Added Vol:	768 32	0	30	.,	22		823			Added Vol:	00	0 0	674 0	453	606 423	0 0	0 281	48	6, 0
PasserByVol: Initial Fut:	0 0 804 327	00	0 304	0 0 34 301	1 452	0 0	0 897	00	00	rasserbyvol: Initial Fut:		0		453	42	0	0 281		ة و
User Adj:		1.00				1.00	1.00	~		User Adj:	0	1.00		٦,			1.00 1.00		0 0
PHF Adj: PHF Volume:	1.00 1.00	00.0	1.00 1.00	00 1.00	1.00	0 7.00	1.00	0 1.00	0 1.60	PHF Adj: PHF Volume:	0 0 0	00.1	705 0	453	606 423	0.1	0 281	1 489	5 6
Reduct Vol:		0					0			Reduct Vol:	0	0 (0 (0 0			0 9
Reduced Vol:	1 00 1 00	000	1.00 1.00	04 301 00 1.00	1 452	1.00	1,00	1.00 1.00	0 1.00	Reduced Vol: PCE Adi:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1 489	, o
MLF Adj:	1.03 1.05	1.00	1.00 1.05			3 1.00	1.00	80.		MLF Adj:	1.00 1.00	1.00	-		1.03	7	0		0
Final Vol.:	828 343	, -	0 319	19 301	1 466	0	897	0	0	Final Vol.:	0 0	0	726 0	453	624 444	0	0 310	0 537	
Saturation Flow Module:	low Module:	-		:	_	•	-		:	Saturation F	Flow Module:	000	0001		- 0001	- 00	1900	000	
Sat/Lane: Adiustment:	1900 1900	1900	1,00 1,00	00 1900	5 0.95	1.00	0.82	1.00 1.00	0 1.00	Sat/Lane: Adjustment:	1.00 1.00	1.00			0.95 1.00				·
Lanes:		0.00	0.00 2.00			0.00	1.00	0.00 0.00		Lanes: Final Sat.:	0.00 0.00	0.00	2.00 0.00 3610 0	1.00	3610 3800	0.00	0.00 1.10 0 1898	0 1.90	ōe
		;		•	=	!			-			=	1 1 1 1 1 1 1 1				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-
Capacity Analysis Module: Vol/Sat: 0.23 0.09 0	lysis Module 0.23 0.09	e: 0.00	0.00 0.08	08 0.19	9 0.13	00.00	0.56	0.00 0.00	00.00	Capacity Analysis Vol/Sat: 0.00 Crit Moves:	lysis Module: 0.00 0.00 0	0.00	0.20 0.00	0.28	0.17 0.12	00.00	0.00 0.16	6 0.16	9
Green/Cycle:		0.00	0.00 0.20			00.00	0.72	00.		Green/Cycle:		00.0				00.00			، ود
Volume/Cap:	0.77 0.18	0.00	0.00 0.42	42 0.30	0 0.31	00.00	0.77	0.00 0.00	0 0.00	Volume/Cap:	00.00 0.00	0.00	0.48 0.00	0.67	0.67 0.23	00.00	0.00 0.67	7 0.25	<u>, -</u>
Level Of Service Module Delay/Veh: 23.2 9.0	vice Module		0.0 22.8		-	0.0	8.0			Level Of Service Module Delay/Veh: 0.0 0.0	vice Module	0.0			22.8 9.1	0.0	0.0 23.1		. 4
User DelAdj:	1.00 1.00	1.00	1.00 1.00	00 1.00		1.00 1.00	1.00	1.00 1.00	0 1.00	User DelAdj: AdiDel/Veh:	1.00 1.00	0.0	1.00 1.00	17.0	1.00 1.00	0.0	0.0 1.00	1 4.4	ō 4.
Onene:		0	0.0				17			Queue:		0			16	0	0		9
******	*********	******	********	****	****	* * * * * * *	* * * *	*******	* * * * * * * * * * * * * * * * * * * *	*****	********	****	*****	* * * * * * * * * *	*****	* * * * * * * * * * * * * * * * * * * *	*****	* * * * * * *	:

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D-PM.CMD	ţ	Tue Nov 5, 1996 10:50:39	01 9661	. 60:33			Page	10-1	D-PM.CMD		Ē.	Tue Nov 5,	1996 10	10:50:39		Pa	Page 11-1	
	FISC	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	t Vision 2000 ed Harbor Fil PM Peak Hour	O EIS/E	rnativ	Đ					FISC	7/Port Vi Reduced F	t Vision 200 ed Harbor Fi PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	tive	1 1 1 1 1		!
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #8 Adeline St./ 3rd St.	Of Service Computation Report ions Method (Future Volume Alt ' 3rd St.	Comput:	Computation Report (Future Volume Alternative	teport	rnative			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Altern Intersection #9 7th/Middle Harbor Rd '	1994 HCM	Level Of Servi HCM Operations Meth	Level Of Service Operations Method	e Comput	Computation Report (Future Volume Alternative)	rt lternative	*		*
Cycle (sec): Loss Time (sec): Optimal Cycle:	100 Critical Vol./Cap. (X): ec): 12 (Y+R = 4 sec) Average Delay (sec/veh): e: 92 Level Of Service:	Critical Vol./Cap. (X): R 4 Sec) Average Delay (sec/veh): Level Of Service:	Critica Average Level (Critical Vol./Cap. (X) Average Delay (sec/veh Level Of Service:	/Cap. (sec/rice:	(X): veh):	•	.668 72.1 F	Cycle (sec): Loss Time (sec) Optimal Cycle:) : e:	100 8 (Y+R 58	= 4 sec)		Critical Vol./Cap. (X): Average Delay (sec/veh) Level Of Service:	p. (X): ec/veh):		0.630 17.2 C	*
Approach: Movement:	North Bound L - T - R	South Bound L - T -	Sound - R	L Ea	East Bound	nd R	West Bound L - T -	ound - R	Approach: Movement:	North	Bound - R	South		East Bound	Sound R	**** Wes	**************************************	• • •
Control: Rights: Min. Green:	Split Phase Include	Sp1	hase ude	<u>.</u> .	Split Phase Include	:	Split Phase Include	 hase ude 20	Control: Rights:	Prote	Protected Include	Prot	Protected Include	Pr	1	Pr	Protected Include	. .
Lanes:	0 1 0 1	0	-	•		; ;	_	-	Lanes:	0 0 7 7	0	, o		0 0 1	1 0	1 0	1 1	٠,
g.		<u>-</u>		-		<u>-</u>	!	! ! !	Volume Module	¦		!	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-	<u> </u>		:
Base Vol: Growth Adj:	1.00 1.00 1.00	1.00 1.00	1.00	1.00	1.00 1	13	89 39 .00 1.00	1.00	Base Vol: Growth Adj:	1.00 1.00	0 0 0	1.00 1.	0 0	1.00 1.00	0 1	1.00 1	0 1.00 1.0	100
Initial Bse: Added Vol:	36 0 122 0 979 0	43 0	15	30	14	13	89 39 0 0	78	Initial Bse: Added Vol:					0 0		0 000	•	2 0
PasserByVol:	0 0 0			0 0	٠;	۰;			PasserByVol:	0		0					0	0 0
User Adj:	1.00	1.00.1	1.00	4	00	1.00 1	.00 1.00	1.00	Initial Fut: User Adj:	1.00 1.0	0 383	1.00 1.	0 0	1.00 1.00	1500	289 ,	446 1	- 6
PHF Adj:	1.00 1.00 1.00	1.00 1.00			00	1.00 1	00 1.00	-	PHF Adj:	÷.		Ξ.	H	1.00		1.00,1		00
Reduct Vol:	0	0		20	0	0			Reduct Vol:	* 0	0 0			0 646	15	289	446 0	۰ 0
Reduced Vol:	36 979 122	43 640		30 14		13	89 39		Reduced Vol:	4 6		•	•	0				
MLF Adj:			1.05			1.00 1	.00 1.00	1.00	MLF Adj:	1.00 1.00	0 1.00	1.00 1.00	.00 1.00	1.00 1.00	1.00	1.00 1	1.00 1.00	00
Final Vol.:	38 1028 128	45 672		30		13	89 39	78	Final Vol.:	4						4) H
Saturation Flow Module:	low Module:	-		: : :			1 5 5 5 2 1 6		Saturation F	- Flow Module			:		-	-		-
Sat/Lane:	1900	1900		1900			006	-		1900 1900				1900	1900	1900 19	1900 1900	00
Adjustment: Lanes:	0.06 1.73 0.21	0.12 1.84	0.04	1.00	0.52 0	0.48 0.	.85 0.90	0.90	Adjustment: Lanes:	1.00 0.00	0 0.85	0.00 0.00	.00 1.00	0.00 1.00	1.00	0.95 1.	1.00 1.00	00
Final Sat.:	119 3206 399	233 3484	83	1805	916	851 15	512 663	1325	Final Sat.:	1805	0 1615							, œ
Capacity Analysis Module	lysis Module:	= ;		_		_		_	Capacity Analysis				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-		:		-
Vol/Sat: Crit Moves:	0.32 0.32 0.32	0.19 0.19	0.19	0.02 0.02		0.02 0	****	90.0	Vol/Sat: Crit Moves:	0.00 0.00	0 0.24	0.00 0.00	00.000	0.00 0.18	0.18	0.16 0.	0.12 0.12	12
Green/Cycle:	0.28 0.28	0.20		0.20			20	0.20	Green/Cycle:	0.38							0.54 0.54	54
volume/cap:	1.15 1.15 1.15		: <u>:</u>	80.0	0 80.0	0.08 0.	.29 0.29	0.29	Volume/Cap:	0.01 0.00	0 0.63	0.00 0.00	00.000	0.00 0.63	0.63	0.63 0.	0.23 0.23	23
Level Of Service Module: Delay/Veh: 100.7 101 1	vice Module: 100.7 101 100.7	43.5 43.5	43.5	21.0 2	21.0 2	21.0 22	2.0 22.0	22.0	Level Of Service Module Delay/Veh: 12.6 0.0	vice Module	le:				9 06	, , , , ,		<u>.</u>
User DelAdj: 1.00 1.00	1.00 1.00 1.00	1.00					00	1.00	User DelAdj:	-		7	7	1.00			, ,	` o
Adjbel/ven: 100.7 Queue: 4	100.7 101 100.7 4 56 9	43.543.5	43.5	21.0 21.0		21.0 22 0	2.0 22.0	22.0	AdjDel/veh:	12.6 0.0	0 18.0	0.0	0.0 0.0	0.0 20.8	20.8	23.4 7		7
****	***********	* * * * * * * * * * * * * * * * * * * *	****	*	:	*	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	***	******	****	*	* * * * *	*	**	* * * * * * * * * * * * * * * * * * * *	******	*

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PISCO/PORT VISION 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour 1994 HCM 1994	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Reduced Harbox Fill Alternative PM Peak Hour	0.673 0.673 16.3 C C West Bound L T R Protected 10.20 0	FISCO/ Registration Protected Prot	FISCO Level 0 Level 0 Level 0 Level 0 Level 0 Level 0 100 Level 0 100 Level 0 Leve	Reduced Harbor Fill Alternative PM Peak Hour Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternat Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps Style (sec): 100 (Y*R = 4 sec) Average Delay (sec/veh) Optimal Cycle: 70 Level Of Service: Approach: North Bound South Bound East Bound Movement: L T R L T R Control: Protected Protected Protected	FISCO/Port Vision 2000 EIS/BIR Reduced Harbor Fill Alternative PM Peak Hour Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) ntersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps versection #12 Maritime St./ W.Grand Ave./ I-880 Ramps	(9.2)
1994 ('M	And Harbor Rd And Harbor Rd Criti R 4 sec) Avera Criti South Bound L T R HILLIAGE Protected 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tation Fri it re Volume Alteriati cal Vol./Cap. (X): og Delay (sec/veh) of Service East Bound L - T - R L - T - R - D 0 0 20 20 0 0 20 20 0 0 0 0 0	0.673 16.3 16.3 West Bound T - T - T - Drotected Include 10 20 0 2 0	Intersection #1 Cycle (sec): Loss Time (sec) Optimal Cycle: Approach: Movement: Control: Rights: Min. Green: Lanes: Lanes: Base Vol: Growth Adi: 1.	Level 0 34 HCM Operatio 12 Maritime St. 10 0 10 (Y+R 70 10 0 10 0 10 0 10 0 10 0 10 0 10 0 1	/ W.Grand Ave./) / W.Grand Ave./)	ation Report e Volume Alternati	ve) ************************************
North F Protect Protec	Criti South Bound L. T. T. T. R. Level	cal Vol./Cap. (X):	0.673 16.3 West Bound T T - Protected Include 10 20 0 2 0	Cycle (sec): Loss Time (sec) Optimal Cycle: Approach: Movement: L	100 10 (Y+R 70 10 Y-R L T R 11 T R Protected Protected 10 20 20	critice a sec) Average Level C South Bound L T R	al Vol./Cap. (X):	******
North Bound L		East Bound L T T	West Bound	ach: L lent: L lool: S: S: S: S: S: S: S: S: S: S: S: S: S:	North Bound TT Protected Include	South Bound L - T - R	sec) Average Delay (sec/veh): Level Of Service:	0.410 18.8 C
-	Protecte Protecte	Protected 10 10 10 10 10 10 10 10 10 10 10 10 10	rotected include 20 0 2 0 0 2 0 0 1 00 1 1 00 1 1 1 1 1		rotected Include 20	Protected	East Bound L - T - R	West Bound L - T - R
10 0 0 1	1.00 1.00	0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20 2 0 2 0 1.00 1.00 1.	Green: :: ie Module Vol:	20	Include	Protected Include	Protected Include
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00	1.00 1.00 0 15 0 15 1.00 1.00	0 1.00 1.	- e	0	10 20 20 1 0 0 1 0	10 20 20 1 0 1 1 1	10 20 20 1 0 1 1 0
le: 0 0 1.00 1.00 1.00 0 0 0 0 0 0 0 0 0 0	1.00 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1.00 1.00 0 0 0 15 0 0 0 15 1.00 1.00	1.00 1.	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1.00 1.00 1.00 1.00 383 0 1.00 1.00 1.00 1.00	1.00 1.00	1.00 1.00 0 0 0 15 0 0 15 1.00 1.00	1.00 1.			9 23	20 454	624
383 0 0 0 383 0 1.00 1.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 15 0 0 0 15 1.00 1.00			1.00 1.00 1.00	1.00 1.00 1.00 9 23 23	1.00 1.00 1.00 20 454 210	1.00 1.00 1.00 0 624 13
1; 0 0 2; 383 0 1,00 1,00	0 0 0 1,00 1,00	0 0 0 15 1.00 1.00) (*		0 2	0	0	0
it: 383 0 1.00 1.00 1.00 1.00	1.00 1.00	1.00 1.00	0 0	PasserByVol:	0 0 0	9 23 23	0 0 0 0 20 454 459	51 624 13
1.00 1.00			1.00 1.0		1.00 1.	1.00 1.00 1.	1.00 1.00	1.00
20.1	1.00 1.00	1.00 1.00	1.00		1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00
PHF Volume: 383 0 618	0 0	0 0 15 289	412 4 0	Reduct Vol:	47 67 68 4		0	0
9		0 15	412 4 0	.:		9 23	20 454	624
1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00	PCE Adj: 1.	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 Final Vol: 383 0 618	0 1.00 1.00 1.00 8 0 0 0 0	0 1.00 1.00 1.00	4.	1.:	23	9 23	20 499	655
1				Saturation Flow Module.	**************************************			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Saturation Flow Module:	0061 0061 0061 0	0061 0061 0061 00	1900 1900 1900	Sat/Lane: 19	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900
t: 0.95 1.00	1.00 1.00	1.00 1.00	1.00	ment:	0.89	0.95 0.93	0.95	0.95 1.00 1.00
Lanes: 1.00 0.00 1.00 ginal gar . 1805 0 1615	0 0.00 0.00 0.00	00 0.00 1.00 1.00 0 0 1900 1615	1.00 2.00 0.00 1805 3800 0	Lanes: 2. Final Sat.: 36	3610 401 1290	1805 884 884	1805 2635	3720
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Capacity Analysis Module:		81.0 10 0 00 0	00.00 00.00 82.00	Capacity Analysis Vol/Sat: 0.13	ysis module: 0.13 0.06 0.06	0.00 0.03 0.03	0.01 0.19 0.19	0.03 0.18 0.18
Crit Moves: ****				es:		* * *	* * * *	
: 0.32 0.00	0.00 0.00	0.00 0.27	34 0.60		0.24 0.29 0.29	0.15	0.15	0.10 0.31 0.31
Volume/Cap: 0.67 0.00 0.58	0.00.00.0	0 79.0 0.00 0.00 00.	0.67 0.00 0.00	Volume/Cap: 0.	0.52 0.20 0.20			
odule:		-		er.	••	23 27 27 2 27 2	23 4 16 5 16 5	77 2 19 3 19 3
	0.0 0.0	0.0 0.0 17.6 23.9	20.3 5.0 0.0	Delay/ven: 21	1.00 1.00 1.00	1.00 1.00	1.00 1.00 1.0	1.00
User DelAdj: 1.00 1.00 1.00	0.0 0.0	0.0 17.6	5.0			23.7 21.2	23.4 16.5	19.3
10 0.0	0	0	10 . 0	Onene:	11 0 2	0 1 1	0 11 11	1 16 0

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Properties Pro																	
1994		ii.	SCO/Port Vi Reduced He	sion 2000 arbor Fil	EIS/EIR 1 Alterna	ative		1		: 	FISC	J/Port Vis Reduced Ha	sion 200 urbor Fi	EIS/EIR	tive		1
The control of the	Intersection	Leve 1994 HCM Operi	of Service trions Method ************************************	e Computa d (Future	tion Repc	ort Alternat:	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *		1994 HCM	Level (Operation of St. / 5	Of Service ons Method	Computer (Future + + + + + + + + + + + + + + + + + + +	tion Report Volume A	rt lternati	1 * 1	
No. 2	Cycle (sec): Loss Time (se Optimal Cycle	100 ic): 12 ()	(+R = 4 sec)	Critica Average Level O	l Vol./Ca Delay (s f Service	ap. (X): sec/veh)	•	510 0.8 D	Cycle (sec) Loss Time (soptimal Cyci	sec):	+ +	11	Critica Average Level C	l Vol./Cap Delay (se f Service	p. (x): ec/veh):		0.227 16.8 C
Protected Prot	Approach: Movement:	North Bound	R L - 7	Bound F - R	East L - T	Bound .	West L - T	Bound - R	Approach: Movement:	,	Bound	. (0	Bound R	East I	Sound - R	*	 Bound T . R
10 1 0 1 0 1 0 1 0 1 0 1 0 0	Control: Rights:	Protected Ov1	Prote	scted	Split	Phase	Split	 Phase lude	Control: Rights:	- Prote Inc	cted	Prote	cted	Split	Phase	Split	Phase
Marie	Min. Green: Lanes:	20	10	-		_	_	-	Min. Green: Lanes:	ຸົ		。°		2 "		10	20 20
Name	Volume Module				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-	Volume Modul			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				<u>:</u>	
The color Color	Base Vol:		241		138 15		0 5	,	Base Vol:	0		0				32	31 34
1.00 1.00	Initial Bse:		241		138 15		3 0	-	Growth Adj: Initial Bse:	1.00		8 °		•	-		31 34
High State 1	Added Vol:	194	0 12			16			Added Vol:							251	
100 100	Initial Fut:	194	241			16		61	PasserByVol: Initial Fur-					٥	•	0 6	
1,00 1,00	User Adj:		1.00		~		00.		User Adj:	1.00 1.0		00.	4	1.00 1.00		1.00 1.	31 34 00 1.00
Vol. 251 194 514 61 10 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PHF Adj: PHF Volume:		1.00				1.00 1.0		PHF Adj:					1.00 1.00		1.00'1.	
National Columbia 1.00 1	Reduct Vol:	0	0		}	í	N		Reduct Vol:	4		7				283	31, 34
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Sat: 1805 1000 1.00 1.29 0.71 1.00 1.00 1.00 1.00 0.79 1.21 Lanes: 0.00 1.00 0.00 1.65 0.35 0.43 1.32 0.25 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0		1.00.	0.95				. 95		Adjustment:	1.00 1.0		1.00 0.97					
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Cycle: 0.20 0.28 0.28 0.20 0.20 0.20 0.20 0.20									Crit Moves:		*	*					02 0.02 **
Volume/Cap: 0.00 0.31 0.44 0.05 0.15 0.15 0.21 0.21 0.24 0.05 0.05			0.11		0.20 0.2		. 28		Green/Cycle:	0.00							
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/Veh: 28.118.5 9.6 147.1 22.0 22.8 23.2 23.3 23.2 23.3 20.3 Adjbel/Veh: 0.016.2 17.1 0.015.3 15.3 21.6 21.6 16.0 13.4 27.1 22.0 22.8 23.2 23.2 23.3 20.3 Adjbel/Veh: 0.016.2 17.1 0.015.3 15.3 21.6 21.6 16.0 13.4 2.0 6 1.0 16.2 17.1 0.015.3 15.3 21.6 21.6 16.0 13.4 2.0 6 1.0 17.1 0.015.3 15.3 21.6 21.6 17.1 0.015.3 15.3 21.6 21.6 17.1 0.015.3 15.3 21.6 21.6 17.1 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 15.3 2.0 6 1.0 0.015.3 2.0 0.0 0.015.3 2.0 0.0 0.015.3 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	User DelAdi:		.6 14/.1 22. 90 1.00 1.0		1 00 1 00		. 6	~ ~	Delay/Veh:	0.6		0.0 15.3					
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D-PM.CMD		Ţ	Tue Nov 5,	1996 10:50:39	0:50:39	6		Page	16-1	D-PM.CMD		Tue	rue Nov 5,	1996	10:50:39		Pa	Page 17-1	
, , , , , , , , , ,	1	FISCO	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	t Vision 200 ed Harbor Fi PM Peak Hour	00 EIS, ill Alt	/EIR ternati	Ve) 1 1 1 1 1 1) ; ; ; ;			FISCO/	Port Vi duced H PM P	t Vision 200 ed Harbor Fi PM Peak Hour	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour	ive			
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.	Level Of Service 1994 HCM Operations Method #15 7th St./ I-880 NB Ram	evel O eration	Level Of Service Computation Report perations Method (Puture Volume Alt	e Compu 1 (Futu ******	re Volu	Computation Report (Future Volume Alternative	ernati	(U)		Lev 1994 HCM Oper 101 Intersection #16 7th St./	HCM 7th	el Of ation ***** I-88	vel Of Service C rations Method (/ I-880 SB Ramps	e Comput d (Futu)	Service Computation Report s Method (Future Volume Alternative)	ternatí			* *
Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 10 (Y+R = 4 sec) Average Delay (sec/veh): Optimal Cycle: 70	100 ec): 10	00 10 (Y+R = 70	= 4 sec)	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh): Level Of Service:	Critical Vol./Cap Average Delay (se Level Of Service:	Critical Vol./Cap. Average Delay (sec. Level Of Service:	(x): /veh):		0.426 18.7 C	Cycle (sec): Loss Time (sec): Optimal Cycle:	100 100 35 (Y+	Y+R	4 sec)	Critic Averac Level	Critical Vol./Cap. (X): 4 sec) Average Delay (sec/veh) Level Of Service:	(X):		0.550 5.6 B	;
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Modul				1					-	Volume Module		<u> </u>					1		-
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PasserByVol:	0 0 0	۰ ۳	۰ ،	0 0	0 0	0 0	00	0 0 0	0 1	PasserByvol: Initial Fut:	00	00	0 0		0 434	670	378	770	- 0
User Adj:	_	1.00				00.1.00	1.00	-	4	User Adj:	-		Н		1.00		-	1	00
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	0 1.00 417	0 1.00	00.	1.00 1.00	00.1	PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1. 0	00.1.00.	0 1.00 1.00	1.00	378	.00 1.0 770	00.
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Lanes:	2.00 0.98	0.02	1.00 0.00				0.00			Lanes:	0.00 0.00		0.00 00.00		0.00		2.00 2.	2.00 0.00	00
Final Sat.:	3610 1872	29	1805	0 3230	-11	2800	0 !!	9878 U	19 6	Final Sat.:		<u> </u>				;			
Capacity Analysis Module	lysis Modul	e: 0.11	0.00 0.00	71.0 00	-	3 0.03	00.0	0.00 0.02	2 0.02	Capacity Analysis Vol/Sat: 0.00	lysis Module	00.00	0.00 00.00	00.000	0.00 0.12			0.21 0.00	- 00
Crit Moves:	****	36.0	****		****		6	****		Crit Moves: Green/Cycle:	00.00.00	00.0	0.00 0.00	00 0 00	0.00 0.75	****	0.20 0.	0.95 0.00	00
Volume/Cap:	0.73 0.41	0.41	0.01.0.00			3 0.07	0.00	00.		Volume/Cap:	0.00 00.00	-			00.00				00
Level Of Service Module: Delav/Veh: 27.7 20.3	 vice Module 27.7 20.3	20.3	24.6 0.0	.0 9.2	-1	1 7.9	0.0	0.0 21.0	0 21.0	Level Of Serv Delay/Veh:	Of Service Module: /veh: 0.0 0.0	0.0	0.00	0.0 0.0	_		24.1 (0.1 0.	0.0
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AdjDel/Veh:	27.7 20.3	20.3	24.6 0.	0.0	2 23.1 9 11	7.9	0.0	0.0 21.0	0 21.0	AdjDel/ven: Queue:	0.0	. 0		0.0	0.0 7.4	ກົໝ	10 24 . 1	1.0	0.0
* * * * * * * * * * * * * * * * * * * *	**********	****	* * * * * * * * *	•	******	*****	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	*****	***********	* * * * * * * * * * * * * * * * * * * *	* * * * * *	* * * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * *	*****	* * * * * * * * * * * * * * * * * * * *	:

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FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2008 IN STREET FigGO/Perior Vision 2009 IN STREET FigGO/Per	1944	FISCO,	Port Vision 2000 educed Harbor Fil	0 EIS/EIR 11 Alternative			F E	SCO/Port Vision	2000 EIS/EIR Fill Alternative		1 1 1 1 1 1 1
10 10 10 10 10 10 10 10	Intersection #17 Intersection #17 Average Delay (see Approach:		PM Peak Hour					Reduced haibor PM Peak H	lour	ນ	
	Average Delay (se	HCM Unb justic	red Method (Future) 180 Frontage Rd.	ati s. Fep. it re Volume Alternat		Intersection	Leve	1 Of Service Com tions Method (Fu ************************************	<pre>putation Report ture Volume Alter ************************************</pre>	rnative)	* * * * * * * * * * * * * * * * * * *
		ec/veh):	2.3 WC	orst Case Level Of		Cycle (sec): Loss Time (se	100 ec): 11 (Y	r*************************************	tical Vol./Cap.	(X): /eh):	0.658 22.8
The blude Include Controll Control C	- ;	. T . k		R R R R R R R R R	L · T · R Stop Sign	Approach:	North Bound	* 1		*	***** st Bo
100 100		Include 0 1 1 0	1 0	Include 0 0 0 0		Control: Rights:	Split Phase	Split Phase Include		-	Protected Include
100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	le.			0	0	Min. Green: Lanes:	20	10 20	10 20 1 0 1	-	0 20 0 1 1
10 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				0 1.00	1.00 1.	Volume Module	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			1 1 1 1 1 1 1 1 1 1 1 1
100 100 100 100 1015 0		417	288	00	00	Base Vol: Growth Adj:	1.00	759 0 1.00 1.00 1	6 86 277	۳ 00	0 456 330
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	ü		288	0 0	15 0	Initial Bse:	72	759 0	6 86 277	m ·	456
1			1.00	1.00 1.00 1	1.00	Added Vol: PasserBvVol:	183	0 0	0 0		12 0
Outside Mail			288	0 0	0	Initial Fut:	255	759 128	86 351		507
National Color		0 0	0 0	00	00	User Adj:	1.00	1.00 1.00	1.00 1.00		1.00
Neduct VO1: 0	Adjusted Volume P					PHF Volume:	255	759 128	98		9 507 330
New York New York		*	*0	*0	0	Reduct Vol:	0	0	0		0
1.10 1.0		XXXX XXXX	XXXX XXXX	XXXX XXXX		Reduced Vol:	255	759 128	86 351		507
XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX	PCE Adj: 1.10	0 1.00 1.00	1.10 1.00 1.00		.10 1.10 1.1	FCE AU): MLF Adj:	1.05	1.05 1.00	1.00 1.05		0 1.10 1.00
A 288		xxxx xxxx	xxxx xxxx			Final Vol.:	268	797 128	86 369		557
2.1		XXXX XXXX	XXXX XXXX	xxxx xxxx	xxxx xxx						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Column C	Critical Gap Modu	u 4/9 130 le:	887	5	>	Sat/Lane:		1900 1900	1900 1900		0061 0061 0
	MoveUp Time:xxxxx	xxxxx xxxx x	2.1 xxxx xxxxx	xxxxx xxxx xxxxx	.4 xxxx 2	Adjustment:	0.93	0.95 0.99	0.95 1.00		0.94
	Critical Gp:xxxx	xxxxx xxxx x	5.5 xxxx xxxxx	XXXXX XXXX XXXXX	xxxx	Lanes:	1.04	2.00 0.96	1.00 1.98		1.82
6 69	Capacity Module:	:	•	* * * * * * * * * * * * * * * * * * * *	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Final Sat.:	1846	3610	4 1805	_	5 3244 2114
## 807 xxxx xxxx xxxx xxxx xxxx xxxx xxxx	Cnflict Vol: xxxx	xxxxx xxxx x	e09 xxxxx		xxxx	Capacity Anal	Module:	-	=	=	
CILT MOVES: CILT MOVES:	Potent Cap.: xxx	XXXXX XXXXX	807 xxxx xxxxx	×××	XXXX	Vol/Sat:	0.15 0	0.22 0.07	0.05 0.10		
		XXXXX XXXX X	807 xxxx xxxxx	XXX	XXXX	Green/Cvcle:	0.21	0.32 0.32	0.10 0.23		
## 4.5 xxxx xxxxx xxxx xxxx xxxx xxxx xxxx	_	1				Volume/Cap:	0.68 0	0.68 0.22	0.48 0.42		0.68
LT - LTR - RT LT - LTR - RT LT - LTR - RT Vetral Delay/Veh: 20.9 25.1 25.1 19.9 15.9 15.9 29.0 21.2 21.2 36.9 c xxxx xxxx xxxx xxxx xxxx xxxx xxxx	Level Of Service	Module:	4 5 *****	*****	, , , , , , , , , , , , , , , , , , ,	Coverage Coverage	rice Module.			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
LT - LTR - RT LT - LTR - RT LT - LTR - RT User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	LOS by Move:	*	* * * A	* * * *	*	Delay/Veh:	. 25	1 19.9 15.9	9 29.0 21.2	2	9 22.8 22.8
t xxxx xxxx xxxx xxxx xxxx xxxx xxxx x	Movement: LT	- LTR - RT	LT - LTR - RT	LT - LTR · RT	· LTR	User DelAdj:	1.00	1.00 1.00	1.00 1.00		1.00
XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX	Shared Cap.: xxxx	XXXXX XXXX X	xxxx xxxx xxxx	XXXXX XXXX XXXX	XXXX	AdjDel/Veh:	25.1 2	19.9 15.9 1	9 29.0 21.2		22.8
	Shrd StpDel:xxxx	· xxxx xxxx x	* * * *	*****	XXX XXX	Onene:	, 7	7 20 3	2	4	5 14 , 10
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A-AM-MIT.CMD

A-PM-MIT.CMD

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Maximum Marine/Maximum Rail Alternative - Mitigated FISCO/Port Vision 2000 EIS/EIR Tue Nov 5, 1996 13:37:22

PM Peak Hour

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Maximum Marine/Maximum Rail Alternative - Mitigated FISCO/Port Vision 2000 EIS/EIR AM Peak Hour

1.00 20 1.00 1.00 1.00 0.93 0.49 860 0.07 0.20 22.3 1.00 22.3 . T . West Bound Protected Include 28.9 Ω 0.675 20 27.1 22.3 1.00 1.00 0.20 1.00 1.00 1.00 1.00 0.33 0 59 5 1900 1900 0.95 0.93 1.00 0.51 0.03 0.07 27.1 22.3 0 9 50 1.00 1.00 0.28 1.00 1805 0.10 1994 HCM Operations Method (Future Volume Alternative) 12 (Y+R = 4 sec) Average Delay (sec/veh): 0.10 21.1 1.00 21.1 1.00 Critical Vol./Cap. (X): 20 1.00 1.00 0.02 0.88 0.83 1385 0.20 L - T - R East Bound Protected Include 0 Level Of Service Computation Report 20 1.00 1.00 Level Of Service: 1.00 287 0.00 0.02 21.1 1900 1900 1.00 1.00 0.95 0.88 1.00 0.17 0.10 0.20 0.04 0.10 26.3 21.1 10 26.3 1.00 1805 0.30 27.6 0.05 0.33 27.6 1.05 0.90 20 1900 1.00 1 . T . R South Bound Split Phase Include 0 1.00 27.6 27.6 1.00 1.00 20 0.23 0.30 0.30 06.0 1020 1.00 1.00 1020 1900 1900 1.00 1.00 0.05 1.90 0.33 0.33 1020 1.00 1.00 91 3618 1.05 1.05 27.6 27.6 27 1071 Intersection #8 Adeline St./ 3rd St. 2 06.0 1.00 1.00 0.25 0.08 1.00 31.9 1.00 1.00 1.00 1.05 1900 0.99 20 145 31.9 31.9 31.9 L . T . R North Bound Split Phase Include Capacity Analysis Module: 0 Level Of Service Module: 100 82 Saturation Flow Module: 0.23 0.23 20 1.00 Green/Cycle: 0.25 0.25 0.90 0.90 AdjDel/Veh: 31.9 31.9 1900 1900 0.02 1.90 1.00 1.00 778 1.00 1.00 1.05 1.05 0.99 0.99 35 3582 Jser DelAdj: 1.00 1.00 1.00 10 Growth Adj: 1.00 Initial Bse: 8 Loss Time (sec): Optimal Cycle: Volume Module: Cycle (sec): PasserByVol: Reduced Vol: Initial Fut: Volume/Cap: Adjustment: Min. Green: PHF Volume: Reduct Vol: Final Vol.: Final Sat.: Crit Moves: Added Vol: Delay/Veh: Approach: Movement: Base Vol: Jser Adj: Sat/Lane: PHF Adj: Control: PCE Adj: MLF Adj: Vol/Sat: Rights: Lanes:

************************************ 1.00 1.00 1.00 06.0 0.67 1140 L - T - R West Bound Protected Include 0.669 26.4 20 1.00 1.00 1.00 0.95 0.90 1.00 0.33 0.05 0.07 0 10 1.00 1.00 1805 1994 HCM Operations Method (Future Volume Alternative) 12 (Y+R = 4 sec) Average Delay (sec/veh): 20 13 1.00 Critical Vol./Cap. (X): 0.93 0.02 1.00 1.00 0.48 L - T - L 0 East Bound Protected Include 0 0 Level Of Service Computation Report 20 1.00 Level Of Service: 1.00 1.00 916 0.02 1.00 1.00 1900 1900 0.95 0.93 1.00 0.52 10 30 1.00 1.00 0.02 1805 0.19 20 0.04 1.00 1.00 1.00 1.00 1.05 L - T - R 0 South Bound Split Phase Include 0 20 1.00 1.05 1.00 1.00 1900 1900 1.00 1.00 0.12 1.84 0.31 0.31 0.31 0.19 0.19 628 628 628 238 3478 Intersection #8 Adeline St./ 3rd St. 10 1.05 45 0 20 1.00 1.00 1.05 1.00 128 1900 408 122 122 122 0.98 0.22 L - T - R North Bound Split Phase Include Capacity Analysis Module: 100 0 82 Saturation Flow Module: 20 1900 1900 1.00 1.00 1.00 1.05 38 1003 0.98 0.98 0.06 1.72 121 3195 10 1.00 1.00 1.00 1.05 Loss Time (sec): Optimal Cycle: Volume Module: Cycle (sec): Initial Bse: PasserByVol: Initial Fut: Growth Adj: Reduced Vol: Adjustment: Final Vol.: Final Sat.: Min. Green: PHF Volume: Reduct Vol: Added Vol: Approach: User Adj: Movement: Base Vol: Sat/Lane: Control: PHF Adj: PCE Adj: MLF Adj: Vol/Sat: Rights: Lanes: Lanes:

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1.00

1.00 1.00 29.3 22.4

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31.2

31.2 31.2 1.00

23.7 23.7 23.7

Delay/Veh:

Level Of Service Module:

0.10 0.20 0.34

0.20

0.49

0.08

0.10 0.20 0.17 0.08

0.87

0.22

0.22 0.22 0.87 0.87

0.36 0.36 0.36 0.87 0.87 0.87

Green/Cycle: 0.36 0.36

Crit Moves:

Volume/Cap:

B-PM-MIT.CMD

FISCO/Port Vision 2000 EIS/EIR Tue Nov 5, 1996 13:38:17

Page 1-1

Minimum Marine/Minimum Rail Alternative - Mitigated FISCO/Port Vision 2000 EIS/EIR AM Peak Hour

Tue Nov 5, 1996 13:37:48

B-AM-MIT.CMD

********** ********** 20 1.00 1.00 1.00 1.00 0.93 0.49 22.3 860 0.07 0.20 0.33 1900 ĸ 0 West Bound , H Protected Include 25.3 0.633 50 0 1.00 1.00 59 59 1.00 1.00 907 0.03 0.07 0.20 0.33 0.95 0.93 1.00 0.51 1.00 1.00 27.1 22.3 0 10 1.00 0.10 0.28 50 1.00 1.00 1805 . *********************** 1994 HCM Operations Method (Future Volume Alternative) ***************** 12 (Y+R = 4 sec) Average Delay (sec/veh): Critical Vol./Cap. (X): 0 0 29 1900 0.88 0.02 0.10 1.00 1.00 1.00 1.00 0.20 1.00 0.83 L - T - R East Bound Protected Include -Level Of Service Computation Report 26.3 21.1 1.00 1.00 26.3 21.1 20 Level Of Service: 1.00 1.00 1.00 1.00 287 0.00 0.02 0.20 0.10 0 1900 1900 0.95 0.88 1.00 0.17 0 ----20 1.00 1.00 0.10 0.04 1.00 1.00 1805 1900 0 0 0.05 0.28 0.33 0.84 23.6 23.6 1.05 1.00 . T. South Bound Split Phase Include 0 20 23.6 23.6 1.00 1.00 1.05 0.33 0.84 23.6 1014 1.00 0.21 0.21 0.21 0.28 0.28 996 Intersection #8 Adeline St./ 3rd St. 10 1.00 1.05 1.00 0.05 0.33 0.84 1900 0 0 0 1900 0.99 0.09 1.00 1.05 0.25 0.84 28.1 28.1 28.1 28.1 1.00 00. L - T - R North Bound Split Phase Include Capacity Analysis Module: 0 Level Of Service Module: 82 0.25 0.25 20 Saturation Flow Module: 0.84 0.84 1.00 1.00 1.00 735 1900 1900 0.99 0.99 0.02 1.89 39 3563 1.00 1.05 1.05 Jser DelAdj: 1.00 1.00 28.1 28.1 0 1.00 10 1.00 Growth Adj: 1:00 Loss Time (sec): Optimal Cycle: Volume Module: Cycle (sec): Green/Cycle: PasserByVol: Reduced Vol: Initial Bse: Initial Fut: Volume/Cap: AdjDel/Veh: Min. Green: Volume: Final Vol.: Adjustment: Final Sat.: Reduct Vol: Crit Moves: Added Vol: Delay/Veh: Jser Adj: Approach: Movement: PCE Adj: MLF Adj: Base Vol: Sat/Lane: Control: Adj: Vol/Sat: Rights: Lanes: PHF PHF

West Bound Protected Include 24.0 0.630 <u>+</u> 20 39 1.00 1.00 1.00 1.00 0 06.0 0.33 570 1900 0 10 89 1.00 0.95 1.00 1.00 1805 1994 HCM Operations Method (Future Volume Alternative) Minimum Marine/Minimum Rail Alternative - Mitigated 12 (Y+R = 4 sec) Average Delay (sec/veh): 13 Critical Vol./Cap. (X): 20 1.00 1.00 1.00 0.93 1.00 1900 0.48 L - T - R East Bound Protected Include 0 Level Of Service Computation Report 20 1.00 1.00 Level Of Service: 1.00 0.93 916 1.00 1.00 1900 1900 1 10 0.95 1.00 1.00 1.00 1805 20 1.00 1.00 0.05 PM Peak Hour 1.05 1900 ĸ South Bound Split Phase Include 0 50 1.00 1.00 1.00 1.05 1.00 3449 570 570 1.00 1.81 Intersection #8 Adeline St./ 3rd St. 10 1.00 1.00 1.00 1.00 0.14 1.05 45 1900 0 20 1.00 1.00 1.00 1.05 1900 0.98 122 122 128 0 North Bound Split Phase Include Capacity Analysis Module: 0 100 82 Saturation Flow Module: ₽ 20 1.00 1.00 891 1900 1900 891 1.00 1.00 1.00 1.05 1.05 0.98 0.98 891 38 936 0.07 1.70 128 3163 9 1.00 1.00 1.00 Loss Time (sec): 0 Optimal Cycle: Volume Module: Growth Adj: Initial Bse: Cycle (sec): PasserByVol: Initial Fut: Reduced Vol: Adjustment: Min. Green: PHF Volume: Final Vol.: Final Sat.: Reduct Vol: Added Vol: Approach: User Adj: Movement: Base Vol: Sat/Lane: PCE Adj: Control: PHF Adj: MLF Adi: Rights: Lanes: Lanes:

20

0

1.00

1.00

1.00 1.00 06.0 0.67 1140 0.07

0.05 0.07

0.02

0.02 0.20 0.17 0.08

0.17 0.02

0.17 0.21

0.17

0.30

0.30 0.30

0.34

0.49 0.34

0.20

0.10

0.20 0.08

0.10

0.21

0.21

0.37

0.37 0.37 0.81 0.81

Green/Cycle:

Crit Moves:

/olume/Cap:

0.81

0.81 0.81

0.81

Level Of Service Module:

21.1 21.1

Delay/Veh:

1.00

1.00 1.00

1.00

1.00 1.00 26.6 21.0

21.0 29.3 22.4

26.6 21.0

28.4 1.00

28.4 28.4 1.00 1.00 28.4 28.4

1.00

User DelAdj: 1.00 1.00

21.1

21.1 21.1

AdjDel/Veh:

21.1

23.6

22.4

29.3

21.0

28.4

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Tue Nov 5, 1996 14:05:58

C-AM-MIT.CMD

Maximum Marine/Minimum Rail Alternative - Mitigated FISCO/Port Vision 2000 EIS/EIR

PM Peak Hour

Tue Nov 5, 1996 14:05:26

Maximum Marine/Minimum Rail Alternative - Mitigated FISCO/Port Vision 2000 EIS/EIR AM Peak Hour

	1994	Le HCM Ope	evel 0	f Servins Met	ervice C	Computa	rion Vol	Report	et nat 1			
Intersection	#8 Ad	deline	St./	3rd St								
le (sec s Time imal Cy); (sec); cle:	100 12 82	(Y+R	4	Sec) A	itic erag vel	al Vol./ e Delay Of Servi	0 - 0	(X): /veh):	0	0.720 36.6	
Approach: Movement:	, N		Bound	Sci	outh Be	Found	1	ast Ho	Hound R	17	Found	ng R
Control:	 Sp1	lit Phase		Sp.	plit Ph	Phase	 P	Protected	 ed	 Prot	Protected	: TO
Rights: Min. Green:	, 01	Include 20	1 0 1	່ ຊິ	Includ 20	lde 20	100	Includ 20 0 0 1	de 20 10	10 10	Includ 20 0 1	e 20
				<u></u>			<u>:</u>	:		: : : : -	:	:
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	8	1		. 26		56	•		7 0	200	n 6	
PCE Adj: Mrs nd:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.	2 0	1.00
		•	33	27	1169	27		9	N		29	
		Module:	-	:		:	<u>:</u>				:	1 1 1
	4	1900	1900	1900	1900	1900	1900	1900	1900	1900 19	006	1900
Adjustment:	0.99		0.99	1.00	Ë,	1.00	0.95	0.88	0.88	0	. 93	0.93
Lanes:	0.02		0.07	0.04	1.92		1.00		٠	00 0.	51	0.49
Final Sat.:	33	m	136	84	3632	84	1805	287	1385	1805 9	0.7	860
	ysi	Mod	ų.	1	:	•	•	! '	1	:		,
Vol/Sat:	0.24	0.24	0.24	0.32	0.32	0.32	00.00	0.02	0.02	0.03 0.	<u>`</u>	0.07
Green/Cvcle:	0.25		0.25	0.33	0.3	0.33	0.10	0.20	0.20	.10 0	.20	0.20
Volume/Cap:	6.	0.97	0.97	0.97	٥.	0.97	0.04	0.10	0.10	0.28 0.	.33	0.33
Level Of Serv	Service	Module		!			<u>:</u>	1	!			1
Delay/Veh:	41.1	4	41.1	35.6	~	35.6	26.	ä	21.1	27.1 22	m.	22.3
User DelAdj:	1.00	i.		1.00	ا نہ	1.00	1.0	1.00	1.00	- 0	00 1	1.00
AdjDel/Veh:	41.1	41.1	41.1	35.6	35	35.6	26.3	21.1	21.1	27.1 22	ŋ.	22.3
	•		r		ď	c	ς	<i>ح</i>	,	-	-	

78 1.00 1.00 ******************** 78 1.00 78 78 1.00 1.00 0.90 1140 22.4 20 0.07 0.34 22.4 L - T - R West Bound 0 Protected Include 30.2 0.706 570 39 1.00 0.20 20 1.00 1.00 0.90 0.33 1.00 1.00 29.3 22.4 39 0 39 0.05 0.07 0.49 0.34 ----29.3 22.4 1 0 1.00 0.95 70 1.00 1.00 1.00 1805 0.10 1.00 1994 HCM Operations Method (Future Volume Alternative) 12 (Y+R = 4 sec) Average Delay (sec/veh): 0.20 1.00 21.0 Critical Vol./Cap. (X): 1.00 1.00 0.93 0.48 851 0.08 1.00 21.0 0.02 L - T - R East Bound Protected Include 1 0 0 1 26.6 21.0 1.00 1.00 26.6 21.0 Level Of Service Computation Report 14 1.00 1900 1900 0.95 0.93 20 1.00 Level Of Service: 0.52 1.00 1.00 1.00 1.00 1805 916 0.02 0.02 0.10 0.20 0.17 0.08 0 10 30 1.00 1.00 36.2 1.00 36.2 15 1900 0.04 0.20 0.22 20 1.00 1.00 79 0 1.05 L - T - R Split Phase South Bound 0 1 0 1 Include 1.00 1.00 1.00 20 670 0 670 1.05 27.6 27.6 27.6 36.2 36.2 36.2 : 1.00 1.00 1.00 1.00 1.00 670 670 1.00 1.00 1.00 1.00 0.12 1.84 0.33 0.33 0.33 0.20 0.20 0.22 0.22 0.92 0.92 36.2 36.2 224 3497 Intersection #8 Adeline St./ 3rd St. 10 1.05 45 122 10 20 20 0 1 0 1 0 1.00 1.00 1.05 0.99 0.20 382 0.36 0.36 0.36 0.36 0.92 AdjDel/Veh: 27.6 27.6 27.6 1.00 0 1900 1900 1900 User DelAdj: 1.00 1.00 1.00 122 122 122 L - T - R Split Phase North Bound Include Capacity Analysis Module: 100 Level Of Service Module: 82 Saturation Flow Module: Growth Adj: 1.00 1.00 0 0 0 0 Green/Cycle: 0.36 0.36 0 1041 36 1041 1.00 1.00 1.00 1.00 36 1041 1041 1.00 1.00 1.05 1.05 38 1093 0.99 0.99 0.06 1.74 114 3266 -----Loss Time (sec): Optimal Cycle: Volume Module: Cycle (sec): Initial Bse: PasserByVol: Initial Fut: Reduced Vol: Final Vol.: Adjustment: Final Sat.: Volume/Cap: Min. Green: PHF Volume: Crit Moves: Reduct Vol: Added Vol: Delay/Veh: User Adj: Approach: Base Vol: PCE Adj: MLF Adj: Sat/Lane: Movement: Adj: Control: Vol/Sat: Rights: Lanes: PHF

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	FISC Reduced	FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative - AM Peak Hour	on 2000 Alter < Hour		Mitigated	eq			ĸ	FISCO	FISCO/Port Vision 2000 EIS/BJ Reduced Harbor Fill Alternative PM Peak Hour	ision 2000 Fill Altern Peak Hour		R - Mitigated		1
**************************************	Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative) Intersection #8 Adeline St./ 3rd St.	Level Of Service Computation Report Operations Method (Future Volume Alt.	Computa (Future	Computation Report (Future Volume Alternative)	rt lternat			Level 1994 HCM Operation #8 Adeline St./	1994 HCM O	Level Of perations	Service S Method	Computat Future	Computation Report (Future Volume Alt.	c Lernative	(a) *	: ** : ** : ** : ** : ** : ** : **
Cycle (sec): Loss Time (sec): Optimal Cycle:	Cycle (sec): 100 Critical Vol./Cap. (X): Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh) Optimal Cycle: 82 Level Of Service:	= 4 sec) P	Critica Average Level O	Critical Vol./Cap. (X): sec) Average Delay (sec/veh) Level Of Service:	p. (X): ec/veh)	*	30.5 D	Cycle (sec): Loss Time (sec): Optimal Cycle:	* * * * ()	* a:		<pre>******** Critical Average I Level Of</pre>	Critical Vol./Cap. (X): Average Delay (sec/veh): Level Of Service:	(X): (veh):	* * * * * * * * * * * * * * * * * * * *	******** 0.680 27.3 D
Approach: Movement:		South Bound East Bound	ound - R	East Bound	Bound - R	West Bound	Sound	**************************************	**************************************	******** Bound T - R	**************************************	****** und - R	East Bound L - T -	******* ound - R	************ West Bound	Bound - R
Control: Rights:	Split Phase Include	Split Phase Include	nase ide	Protected Include	otected Include	 Protected Include	:ted ude	Control:	Split Phase	hase	Split Phase	ase	Protected		Protected	cted
Min. Green: Lanes:	10 20 20 0 1 0 1 0	010	20	10 20 1 0 0	1 0	10	1 0	Min. Green: Lanes:	10 20	1 0	10 20	1 20	10 20 1 0 0	1 0 1	10 20	inciude 20 20 0 1 0
Volume Module:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-	-				Volume Module:		-		=				
Base Vol:	•	26		8 6	•	20	•	Base Vol:			43 0		30 14		89 39	
	-		26	1.00 1.00 8	0 1.00 6 29	50 59	56	Growth Adj: . Initial Bse:	1.00 1.00 36 0	1.00	1.00 1.00	1.00	1.00 1.00 30 14	1.00	1.00 1.00	1.00
Added Vol:	0 793 0	0 1048	00	00	0 0	00		Added Vol:	9	0	64	0		0		
Initial Fut:	793 3	26 104	7		2	20 02	999	Fasserbyvol: Initial Fut:	36 979	122	43 640	0 1	0 0 0 0 0 0	0 [0 0	0 00
	1.00	1.00		~		1.00		User Adj:	1.00 1.00				ri.		Η.	٦.
PHF Adj: 1 PHF Volume:	1.00 1.00 1.00 8 793 31	26 1048	1.00	1.00 1.00 8 6	0 1.00	1.00 1.00	1.00	PHF Adj: PHF Volume:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	
Reduct Vol:	0	0				0		Reduct Vol:		0		3 0		0	0 0	. 0
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	1.05		1.05	1.00 1.00	1.00	1.00 1.00	1.00	MLF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00 1.00	00.1	1.00 1.00	
::	8 832 3	27				20		Final Vol.:	38 1028	128			30 14		89 39	1.00
										<u> </u>					i	1
Saturation Flow Module Sat/Lane: 1900 1900	1900 1900 1900	1900	1900	1900 1900	1900	0081 0081	0	Saturation Flow Module	low Module							
::		1.00				0.95	10	Sat/Lane: Adiustment:	0.98 0.98	0061	1900 1900	1900	1900 1900	1900		
	1.91	0.05		1.00 0.17		1.00		Lanes:		0.21					1.00 0.33	06.0
Final Sat.:	34 3585 142	42 89 3622	89	1805 287	7 1385	1805 907	098	Final Sat.:	119 3206	399						
Capacity Analysis Module:		=	-	_			- !	Capacity Anal	 Vsis Modul		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					1
	0.23 0.23 0.23	0.30	0.30	0.00 0.02	2 0.02	0.03	0.07	Vol/Sat:	0.32		0.19 0.19	0.19 0	0.02 0.02	0.02	0.05 0.07	0.07
		6	;			,		Crit Moves:							:	
Volume/Cap: 0	0.92 0.92 0.92	0.92 0.92	0.92	0.10 0.20	0.20	0.10 0.20	0.20	Green/Cycle: Volume/Cap:	0.36 0.36	0.36	0.22 0.22	0.22 0	0.10 0.20	0.20	0.10 0.20	0.20
.	;				<u> </u>							_		=		- ;
Level UI service module Delav/Veh: 33.9 33.9	33.9 33.9 33.9	29.2 29.2	29.2	26.3 21.1	21.1	27.1.22.3	20 3	Level Of Serv	Of Service Module		יי ני					
		1.00	1.00			1.00		User DelAdi:	1.00 1.00			32.5	7 00 1 00	2 0.12	29.3 22.4	22.4
AdjDel/Veh: 3	33.9 33.9 33.9	29.2 28	29.5	26.3 21.1		27.1		AdjDel/Veh:	24.7 24.7		32.5 32.5		26.6 21.0			
Onene.	1 26 2	2 33	·	0	-			. 9119110	,							

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Appendix J.8
Freeway LOS Calculations - AM and PM Peak Hour

Table J.8-1
Freeway Level of Service Calcuations - AM Peak Hour

1. I-80 at the Bay Bridge

Alternative		el of vice		ıme/ acity	1	mber anes	Traffic	Volume		nge in ume
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	Ç	F	0.61	1.07	5	5	6,130	10,728	0	0
Maximum Marine/Maximum Rail	C	F	0.62	1.08	5	5	6,207	10,758	77	30
Minimum Marine/Minimum Rail	С	F	0.62	1.08	5	5	6,184	10,753	54	25
Maximum Marine/Minimum Rail	С	F	0.62	1.08	5	5	6,219	10,760	89	32
Reduced Harbor Fill	С	F	0.62	1.08	5	5	6,209	10,758	79	30

2. I-80 Between I-880 & I-580

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		nge in ume
	EB	WB†	EB	WB	ΕB	WB	EB	WB	EB	WB
No Project	В	F	0.44	1.08	3	3	2,665	6,492	0	0
Maximum Marine/Maximum Rail	В	F	0.44	1.08	3	3	2,654	6,487	-11	-5
Minimum Marine/Minimum Rail	В	F	0.45	1.08	3	3	2,675	6,509	10	17
Maximum Marine/Minimum Rail	В	F	0.44	1.08	3	3	2,646	6,477	-19	-15
Reduced Harbor Fill	В	F	0.44	1.08	3	3	2,652	6,485	-13	-7

3. I-80 East of I-80/I-580 Split

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		nge in ume
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	D	F	0.86	1.09	4	4	6,877	8,714	0	0
Maximum Marine/Maximum Rail	D.	F	0.86	1.09	4	4	6,913	8,743	36	29
Minimum Marine/Minimum Rail	D	F	0.86	1.09	4	4	6,914	8,754	37	40
Maximum Marine/Minimum Rail	D	F	0.86	1.09	4	4	6,915	8,752	38	38
Reduced Harbor Fill	Ð	F	0.86	1.09	4	4	6,913	8,745	36	31

4. I-880 Connector to I-80 East

Alternative		el of vice		ime/ acity	11	mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	С	0.40	0.59	2	2	1,610	2,379	0	0
Maximum Marine/Maximum Rail	В	С	0.42	0.61	2	2	1,674	2,434	64	55
Minimum Marine/Minimum Rail	В	С	0.41	0.60	2	2	1,646	2,417	36	38
Maximum Marine/Minimum Rail	В	С	0.42	0.61	2	2	1,679	2,446	69	67
Reduced Harbor Fill	В	С	0.42	0.61	2	2	1,676	2,438	66	59

5. I-880 Connector to I-80 West

Alternative		el of vice	Volu Cap	ime/ acity	1	mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	Α	Α	0.33	0.20	2	2	1,300	810	0	0
Maximum Marine/Maximum Rail	Α	Α	0.33	0.22	2	2	1,318	881	18	71
Minimum Marine/Minimum Rail	Α	Α	0.33	0.22	2	2	1,335	882	35	72
Maximum Marine/Minimum Rail	Α	Α	0.33	0.22	2	2	1,313	884	13	74
Reduced Harbor Fill	Ą	Α	0.33	0.22	2	2	1,317	882	17	72

6. I-880 North of 7th St.

Alternative		el of vice	Volu Cap			mber anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	В	0.40	0.38	3	3	2,412	2,276	0	0
Maximum Marine/Maximum Rail	В	В	0.41	0.39	3	3	2,454	2,313	42	37
Minimum Marine/Minimum Rail	В	В	0.40	0.38	3	3	2,384	2,256	-28	-20
Maximum Marine/Minimum Rail	В	В	0.39	0.37	3	3	2,351	2,220	-61	-56
Reduced Harbor Fill	В	В	0.41	0.39	3	3	2,457	2,319	45	43

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-1 (Continued) Freeway Level of Service Calcuations - AM Peak Hour

7. 1-880 South of 7th St.

Alternative		el of vice		ıme/ acity	11	mber .anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	С	В	0.64	0.42	3	3	3,844	2,509	0	0
Maximum Marine/Maximum Rail	С	В	0.67	0.44	3	3	4,030	2,665	186	156
Minimum Marine/Minimum Rail	С	В	0.66	0.43	3	3	3,931	2,584	87	75
Maximum Marine/Minimum Rail	С	В	0.63	0.41	3	3	3,793	2,436	-51	-73
Reduced Harbor Fill	С	В	0.67	0.44	3	3	4,022	2,661	178	152

8. I-880 North of I-980

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	С	Α.	0.63	0.33	3	3	3,757	1,981	0	0
Maximum Marine/Maximum Rail	С	Α	0.65	0.35	3	3	3,900	2,096	143	115
Minimum Marine/Minimum Rail	С	Α	0.65	0.35	3	3	3,872	2,089	115	108
Maximum Marine/Minimum Rail	С	Α	0.63	0.35	3	3	3,768	2.100	11	119
Reduced Harbor Fill	С	Α	0.65	0.35	3	3	3,890	2,095	133	114

9. I-880 South of I-980

Alternative		el of vice		ime/ acity	11	mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	E	С	0.93	0.66	4	4	7,447	5,258	0	0
Maximum Marine/Maximum Rail	E	C ,	0.95	0.67	4	4	7,598	5,373	151	115
Minimum Marine/Minimum Rail	Ε	C	0.95	0.67	4	4	7,585	5,366	138	108
Maximum Marine/Minimum Rail	Ε	С	0.95	0.67	4	4	7,621	5,377	174	119
Reduced Harbor Fill	E	С	0.95	0.67	4	4	7,603	5,372	156	114

10. I-880 North of I-238

Alternative		el of vice	1	ıme/ acity		mber .anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	D	1.14	0.90	4	4	9,080	7,168	0	0
Maximum Marine/Maximum Rail	F	ם	1.15	0.91	4	4	9,231	7,283	151	115
Minimum Marine/Minimum Rail	F	D	1.15	0.91	4	4	9,218	7,276	138	108
Maximum Marine/Minimum Rail	F	D	1.16	0.91	4	4	9,254	7,287	174	119
Reduced Harbor Fill	F	D	1.15	0.91	4	4	9,236	7,282	156	114

11. I-880 South of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.17	1.27	4	4	9,395	10,136	0	0
Maximum Marine/Maximum Rail	F	F	1.19	1.28	4	4	9,512	10,211	117	75
Minimum Marine/Minimum Rail	F	F	1.19	1.28	4	4	9,494	10,205	99	69
Maximum Marine/Minimum Rail	F	F	1.19	1.28	4	4	9,528	10,214	133	78
Reduced Harbor Fill	F	F	1.19	1.28	4	4	9,516	10,211	121	75

12. I-238

Alternative		el of vice		ume/ acity	11	mber anes	Traffic	Volume	1	ige in ume
·	EB†	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	В	F	0.53	1.01	3	3	3,163	6,089	0	0
Maximum Marine/Maximum Rail	В	F	0.53	1.02	3	3	3,203	6,123	40	34
Minimum Marine/Minimum Rail	В	F	0.53	1.02	3	3	3,202	6,128	39	39
Maximum Marine/Minimum Rail	В	F	0.53	1.02	3	3	3,204	6,130	41	41
Reduced Harbor Fill	В	F	0.53	1.02	3	3	3,202	6,125	39	36

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-1 (Continued) Freeway Level of Service Calcuations - AM Peak Hour

13. I-580 East of I-238

Alternative		el of vice		ume/ acity		mber anes	Traffic	Volume		nge in ume
	EB	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	С	D	0.65	0.87	5	5	6,539	8,658	0	0
Maximum Marine/Maximum Rail	С	D	0.66	0.87	5	5	6,579	8,693	40	35
Minimum Marine/Minimum Rail	С	D	0.66	0.87	5	5	6,578	8,700	39	42
Maximum Marine/Minimum Rail	С	D	0.66	0.87	5	5	6,580	8,699	41	41
Reduced Harbor Fill	С	D	0.66	0.87	5	5	6,578	8,694	39	36

14. I-580 West of I-238

Alternative		el of vice		ime/ acity		mber anes	Traffic	Volume		ige in ume
	EB	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
· No Project	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Maximum Marine/Maximum Rail	Ð	E	0.93	0.95	4	4	7,418	7,630	0	0
Minimum Marine/Minimum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Maximum Marine/Minimum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Reduced Harbor Fill	D	E	0.93	0.95	4	4	7,418	7,630	0	0

15. I-580 East of I-980/SH 24

Alternative		el of vice	i	ume/ acity	H	mber .anes	Traffic	Volume		ige in ume
	EB	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Maximum Marine/Maximum Rail	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Minimum Marine/Minimum Rail	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Maximum Marine/Minimum Rail	С	F	0.60	1.09	4	4	4,783	8,698	0	0
Reduced Harbor Fill	C	F	0.60	1.09	4	4	4,783	8,698	0	0

16. I-580 West of I-980/SH 24

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		ige in ume
	EB†	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	С	Ε	0.67	0.98	5	5	6,665	9,843	0	0
Maximum Marine/Maximum Rail	С	E	0.67	0.99	5	5	6,681	9,864	16	21
Minimum Marine/Minimum Rail	С	Е	0.67	0.99	5	5	6,675	9,858	10	15
Maximum Marine/Minimum Rail	С	E	0.67	0.99	5	5	6,676	9,857	11	14
Reduced Harbor Fill	С	E	0.67	0.99	5	5	6,681	9,864	16	21

17. 1-980

Alternative	Leve Ser	el of vice		ıme/ acity	13	mber .anes	Traffic	Volume		nge in ume
	NB†	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	D	0.43	0.83	4	4	3,403	6,619	0	0
Maximum Marine/Maximum Rail	В	D	0.42	0.82	4	4	3,391	6,599	-12	-20
Minimum Marine/Minimum Rail	В	D ·	0.42	0.83	4	4	3,398	6,612	-5	-7
Maximum Marine/Minimum Rail	В	D	0.42	0.83	4	4	3,397	6,609	-6	-10
Reduced Harbor Fill	В	D	0.42	0.83	4	4	3,391	6,600	-12	-19

18. SH 24 East of I-580

Alternative		el of vice		ıme/ acity	1	mber .anes	Traffic	Volume		ige in ume
	EB†	WB†	EB	WB	ΕB	WB	EB	WB	EB	WB
No Project	Α	F	0.30	1.01	4	4	2,436	8,090	0	0
Maximum Marine/Maximum Rail	Α	F	0.31	1.01	4	4	2,448	8,091	12	1
Minimum Marine/Minimum Rail	Α	F	0.31	1.01	4	4	2,444	8,095	8	5
Maximum Marine/Minimum Rail	Α	F	0.31	1.01	4	4	2,450	8,093	14	3
Reduced Harbor Fill	Α	F	0.31	1.01	4	4	2,449	8,091	13	1

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2
Freeway Level of Service Calculations - PM Peak Hour

1. I-80 at the Bay Bridge

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		nge in ume
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	С	1.18	0.73	5	5	11,845	7,305	0	0
Maximum Marine/Maximum Rail	F	С	1.19	0.74	5	5	11,873	7,375	28	70
Minimum Marine/Minimum Rail	F	С	1.19	0.74	5	5	11,868	7.355	23	50
Maximum Marine/Minimum Rail	F	С	1.19	0.74	5	5	11,876	7.386	31	81
Reduced Harbor Fill	F	С	1.19	0.74	5	5	11,873	7,377	28	72

2. I-80 Between I-880 & I-580

Alternative		el of vice		ume/ acity		mber .anes	Traffic	Volume		nge in ume
	EB	WB†	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	С	В	0.70	0.41	3	3	4,217	2,430	0	0
Maximum Marine/Maximum Rail	Ç	В	0.70	0.40	3	3	4,211	2.422	-6	-8
Minimum Marine/Minimum Rail	С	В	0.71	0.41	3	3	4,233	2,439	16	9
Maximum Marine/Minimum Rail	C	В	0.70	0.40	3	3	4,202	2,416	-15	-14
Reduced Harbor Fill	С	В	0.70	0.40	3	3	4,209	2,420	-8	-10

3. I-80 East of I-80/I-580 Split

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		nge in ume
	EB†	WB†	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	F	F	1.20	1.02	4	4	9,614	8,123	0	0
Maximum Marine/Maximum Rail	F	F	1.21	1.02	4	4	9,650	8,151	36	28
Minimum Marine/Minimum Rail	F	F	1.21	1.02	4	4	9,656	8,153	42	30
Maximum Marine/Minimum Rail	F	F	1.21	1.02	4	4	9,658	8.153	44	30
Reduced Harbor Fill	F	F	1.21	1.02	4	4	9,651	8,151	37	28

4. I-880 Connector to I-80 East

Alternative		el of vice		ıme/ acity		mber anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	С	0.53	0.59	2	2	2,118	2,349	0	0
Maximum Marine/Maximum Rail	С	С	0.55	0.60	2	2	2,180	2,398	62	49
Minimum Marine/Minimum Rail	В	С	0.54	0.59	2	2	2,158	2,379	40	30
Maximum Marine/Minimum Rail	С	С	0.55	0.60	2	2	2,190	2,403	72	54
Reduced Harbor Fill	С	С	0.55	0.60	2	2	2,182	2,400	64	51

5. I-880 Connector to I-80 West

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	Α	Α	0.25	0.31	2	2	1,010	1,240	0	0
Maximum Marine/Maximum Rail	Α	Α	0.27	0.32	2	2	1,074	1,260	64	20
Minimum Marine/Minimum Rail	Α	Α	0.27	0.32	2	2	1,076	1,272	66	32
Maximum Marine/Minimum Rail	Α	Α	0.27	0.31	2	2	1,075	1,256	65	16
Reduced Harbor Fill	Α	Α	0.27	0.31	2	2	1,074	1,258	64	18

6. I-880 North of 7th St.

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NΒ	SB	NB	SB	NB	SB
No Project	В	В	0.40	0.45	3	3	2,419	2,687	0	0
Maximum Marine/Maximum Rail	В	В	0.41	0.45	3	3	2,460	2,719	41	32
Minimum Marine/Minimum Rail	В	В	0.40	0.44	3	3	2,400	2,666	-19	-21
Maximum Marine/Minimum Rail	В	В	0.39	0.44	3	3	2,368	2,640	-51	-47
Reduced Harbor Fill	В	В	0.41	0.45	3	3	2,465	2,722	46	35

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2 (Continued) Freeway Level of Service Calculations - PM Peak Hour

7. I-880 South of 7th St.

Alternative		el of vice		ıme/ acity	11	mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	С	0.49	0.68	3	3	2,928	4,060	0	0
Maximum Marine/Maximum Rail	В	С	0.51	0.71	3	3	3,063	4,232	135	172
Minimum Marine/Minimum Rail	В	С	0.50	0.69	3	3	2,984	4,150	56	90
Maximum Marine/Minimum Rail	В	С	0.48	0.67	3	3	2,867	4,022	-61	-38
Reduced Harbor Fill	В	С	0.51	0.70	3	3	3,061	4,223	133	163

8. I-880 North of I-980

Alternative		el of vice		ime/ acity		mber anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	В	В	0.48	0.50	3	3	2,869	3,015	0	0
Maximum Marine/Maximum Rail	В	В	0.49	0.53	3	3	2,963	3,166	94	151
Minimum Marine/Minimum Rail	В	В	0.49	0.53	3	3	2,944	3.150	75	135
Maximum Marine/Minimum Rail	В	В	0.48	0.53	3	3	2.859	3.185	-10	170
Reduced Harbor Fill	В	В	0.49	0.53	3	3	2,956	3,169	87	154

9. I-880 South of I-980

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	D	С	0.93	0.76	4	4	7,426	6,051	0	0
Maximum Marine/Maximum Rail	E	D	0.94	0.78	4	4	7,518	6,202	92	151
Minimum Marine/Minimum Rail	E	D	0.94	0.77	4	4	7,514	6,186	88	135
Maximum Marine/Minimum Rail	E	D	0.94	0.78	4	4	7,524	6,221	98	170
Reduced Harbor Fill	Ε	D	0.94	0.78	4	4	7,518	6,205	92	154

10. I-880 North of I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		ige in ume
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.06	1.19	4	4	8,474	9,555	0	0
Maximum Marine/Maximum Rail	F	F	1.07	1.21	4	4	8,566	9,706	92	151
Minimum Marine/Minimum Rail	F	F	1.07	1.21	4	4	8,562	9,690	88	135
Maximum Marine/Minimum Rail	F	F	1.07	1.22	4	4	8,572	9,725	98	170
Reduced Harbor Fill	F	F	1.07	1.21	4	4	8,566	9,709	92	154

11. I-880 South of I-238

Alternative		el of vice		ime/ acity	()	mber .anes	Traffic	Volume		nge in ume
	NB	SB	NB	SB	ΝB	SB	NB	SB	NB	SB
No Project	F	F	1.20	1.21	4	4	9,574	9,655	0	0
Maximum Marine/Maximum Rail	F	F	1.20	1.22	4	4	9,636	9,768	62	113
Minimum Marine/Minimum Rail	F	F	1.20	1.22	4	4	9,632	9,750	58	95
Maximum Marine/Minimum Rail	F	F	.1.21	1.22	4	4	9,640	9,782	66	127
Reduced Harbor Fill	F	F	1.20	1.22	4	4	9,636	9,770	62	115

12. I-238

Alternative		el of vice		ime/ acity		mber .anes	Traffic	Volume		nge in ume
<u> </u>	EB†	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	Е	D	0.95	0.79	3	3	5,699	4,748	0	0
Maximum Marine/Maximum Rail	Ε	D	0.96	0.80	3	3	5,738	4,778	39	30
Minimum Marine/Minimum Rail	E	D	0.96	0.80	3	3	5,741	4,778	42	30
Maximum Marine/Minimum Rail	Ε	D	0.96	0.80	3	3	5,743	4,779	44	31
Reduced Harbor Fill	Ε	D	0.96	0.80	3	3	5,738	4,778	39	30

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2 (Continued) Freeway Level of Service Calculations - PM Peak Hour

13. I-580 East of I-238

Alternative		el of vice		ıme/ acity		mber .anes	Traffic	Volume		ige in ume
	EB	WB	EB	WB	EΒ	WB	EB	WB	EB	WB
No Project	D	D	0.89	0.81	5	5	8,888	8,147	0	0
Maximum Marine/Maximum Rail	D	D	0.89	0.82	5	5	8,927	8,176	39	29
Minimum Marine/Minimum Rail	D	D	0.89	0.82	5	5	8,930	8,178	42	31
Maximum Marine/Minimum Rail	D	D	0.89	0.82	5	5	8,932	8,178	44	31
Reduced Harbor Fill	D	D	0.89	0.82	5	5	8,927	8,176	39	29

14. I-580 West of I-238

Alternative		el of vice		ume/ acity	11	mber anes	Traffic	Volume		nge in ume
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Maximum Marine/Maximum Rail	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Minimum Marine/Minimum Rail	F	D	1.01	0.86	4	4	8,060	6,887	2	0
Maximum Marine/Minimum Rail	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Reduced Harbor Fill	F	D	1.01	0.86	4	4	8,058	6,887	0	0

15. I-580 East of I-980/SH 24

Alternative		el of vice		ıme/ acity	` '	mber anes	Traffic	Volume		nge in ume
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	С	1.20	0.73	4	4	9,602	5,825	0	0
Maximum Marine/Maximum Rail	F	С	1.20	0.73	4	4	9,602	5,825	0	0
Minimum Marine/Minimum Rail	F	С	1.20	0.73	4	4	9,604	5,825	2	0
Maximum Marine/Minimum Rail	F	С	1.20	0.73	4	4	9,602	5,825	0	0
Reduced Harbor Fill	F	С	1.20	0.73	4	4	9,602	5,825	0	0

16. I-580 West of I-980/SH 24

Alternative		el of vice		ime/ acity		mber .anes	Traffic '	Volume		ige in ume
	EB†	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	С	1.09	0.73	5	5	10,851	7,322	0	0
Maximum Marine/Maximum Rail	F	С	1.09	0.73	5	5	10,871	7,334	20	12
Minimum Marine/Minimum Rail	F	С	1.09	0.73	5	5	10,865	7,330	14	8
Maximum Marine/Minimum Rail	F	С	1.09	0.73	5	5	10,864	7,330	13	8
Reduced Harbor Fill	F	С	1.09	0.73	5	5	10,871	7,334	20	12

17. I-980

Alternative	Lev Ser	el of vice		ime/ acity		mber anes	Traffic	Volume	Char Volu	ige in ume
	NB†	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	E	В	0.94	0.48	4	4	7,538	3,864	0	0
Maximum Marine/Maximum Rail	E	В	0.94	0.48	4	4	7,521	3,854	-17	-10
Minimum Marine/Minimum Rail	E	В	0.94	0.48	4	4	7,532	3,860	-6	-4
Maximum Marine/Minimum Rail	E	В	0.94	0.48	4	4	7,530	3,858	-8	-6
Reduced Harbor Fill	E	В	0.94	0.48	4	4	7,521	3,854	-17	-10

18. SH 24 East of I-580

· Alternative		el of vice		ime/ acity	1	mber anes	Traffic	Volume		ige in ume
-	EB†	WB†	EB	WB	EΒ	WB	EΒ	WB	EB	WB
No Project	F	В	1.11	0.46	4	4	8,905	3,717	0	0
Maximum Marine/Maximum Rail	F	В	1.11	0.46	4	4	8,907	3,719	2	2
Minimum Marine/Minimum Rail	F	В	1.11	0.47	4	4	8,910	3,720	5	3
Maximum Marine/Minimum Rail	F	В	1.11	0.47	4	4	8,910	3,720	5	3
Reduced Harbor Fill	F	В	1.11	0.46	4	4	8,908	3,719	3	2

[†] Freeway segment is excluded from compliance with Alameda County CMA Standards.

Appendix J.9 Vehicle Delay at Railroad Crossings

Vehicle Delay at Railroad Crossings FISCO/Port Vision 2000 EIS/EIR Summary of Project Alternatives

Crossing Street			Gate Down Time (min./day)	n./day)				Vehicular Delay (hours/day)	ours/day)	
			Project Alternativ	ve				Project Alternative	ative	
	S					9				
	Action	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill	Action	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1. Cutting Boulevard	44	999	47	88	28	16.4	23.0	18.0	23.9	23.9
2. Gilman Street	46	. 29	49	9	19	11.4	16.3	12.8	16.9	16.9
3. Camelia Street	46	29	49	61	19	1.2	1.7	1.3	1.8	8:
4. Cedar Street	46	29	49	19	19	2.2	3.2	2.5	3.3	3.3
5. Virginia Street	46	29	49	61	61	0.	1.5	1.2	1.5	5:1
6. Hearst Avenue	46	29	49	61	61	3.8	5.4	4.2	5.6	5.6
7. Addison Street	46	65	49	61	19	1,2	1.7	1.3	9:1	1.8
8. Bancroft Way	46	29	49	61	19	1.2	1.7	1.3	8:1	8:
9. 67th Street	28	72	9	74	74	1.7	2.5	2.0	2.6	5.6
10. 66th Street	99	72	9	74	74	1.7	2.5	2.0	2.6	2.6
11. 65th Street	28	72	9	74	74	2.3	3.4	2.7	3.5	3.5
12. Market Street	2	02	02	20	2	4.6	4.6	4.6	9.4	9.4
13. M. L. King Blvd.	2	70	20	92	2	0.4	4.0	4.0	4.0	4.0
14. Clay Street	2	02	22	2	2	2.1	2.1	2.1	2.1	2.1
15. Washington Street*	2	20	02	2	22	0.8	8.0	9.0	9.0	9.0
16. Broadway*	2	02	20	20	2	16.1	16.1	16.1	16.1	16.1
17. Franklin Street*	20	70	20	20	20	2.2	2.2	2.2	2.2	2.2
18. Webster Street	2	70	20	۶	2	4.3	4.3	4.3	6.4	6.4
19. Oak Street	2	22	02	92	22	4.6	4.6	4.6	4.6	4.6
20. 5th Avenue	59	29	53	53	53	3.6	3.6	3.6	3.6	3.6
21. 29th Avenue	19	19	19	19	19	2.2	2.2	2.2	2.2	2.2
22. Fruitvale Avenue	19	19	- 19	5	19	5.3	5.3	5.3	5.3	5.3
23. 37th Avenue	19	19	19	19	19	0.3	0.3	0.3	0.3	0.3
Total Delay						90.6	109.4	95.9	111.7	111.7

Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.
Note and Associates 1996
Dowling Associates 1996

Table J.9-2
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
No Project Alternative

		Nun	nber of T	rains in	Both Direction	ns	Train Spe	ed (mph)
Crossing Street		nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	20	18			42	60	60
2. Gilman Street	4	20	17	4	2	47	60	60
3. Camelia Street	4	20	17	4	2	47	60	60
4. Cedar Street	4	20	17	4	2	47	60	60
5. Virginia Street	4	20	17	4	2	47	60	60
6. Hearst Avenue	4	20	17	4	2	47	60	60
7. Addison Street	4	20	17	- 4	2	47	60	60
8. Bancroft Way	4	20	17	4	2	47	60	60
9. 67th Street	4	20	17	4	2	47	45	45
10. 66th Street	4	20	17	4	2	47	45	45
11. 65th Street	4	20	17	4	2	47	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4	•	48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4	,	48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		. 20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-3
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
No Project Alternative

	Ga	te Down	Time Pe	er Train (minutes)	Total Gate
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	44
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	46
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	46
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	46
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	46
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	46
7. Addison Street	0.7	0.6	1.6	0.7	0.6	46
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	46
9. 67th Street	0.8	0.7	2.0	0.8	0.6	56
10. 66th Street	0.8	0.7	2.0	0.8	0.6	56
11. 65th Street	0.8	0.7	2.0	0.8	0.6	56
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-4
FISCO/Port Vision 2000 EIS/EIR
Traffic Volumes at Railroad Crossings
No Project Alternative

Crossing Street	Jurisdiction	Average Daily Traffic for Year Traffic Was Counted	Year Traffic Was Counted	Average Daily Traffic (2010)
Cutting Boulevard	Richmond	26,892	1994	31,270
2. Gilman Street	Berkeley	17,413	1986	21,830
3. Camelia Street	Berkeley		1996 (Estimated Max.)	
4. Cedar Street	Berkeley	3,413	1986	4,280
5. Virginia Street	Berkeley	1,584	1986	1,980
6. Hearst Avenue	Berkeley	5,758	1986	7,220
7. Addison Street	Berkeley		1996 (Estimated Max.)	2,280
8. Bancroft Way	Berkeley		1996 (Estimated Max.)	
9. 67th Street	Emeryville		1996 (Estimated Max.)	
10. 66th Street	Emeryville		1996 (Estimated Max.)	2,280
11. 65th Street	Emeryville		1995	3,080
12. Market Street	Oakland	3,655	1996	3,920
13. M. L. King Blvd.	Oakland	309	1976	360
14. Clay Street	Oakland	1,531	1977	1,800
15. Washington Street	Oakland	613	1976	720
16. Broadway	Oakland	11,833	1978	13,800
17. Franklin Street	Oakland	1,626	1976	1,920
18. Webster Street	Oakland	3,111	1974	3,690
19. Oak Street	Oakland	3,340	1976	3,930
20. 5th Avenue	Oakland	6,224	1976	7,330
21. 29th Avenue	Oakland	9,034	1990	9,960
22. Fruitvale Avenue	Oakland	22,304	1993	24,220
23. 37th Avenue	Oakland	1,070	1994	1,160

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Note: Escalation factors were applied to escalate counts to 1996 estimated values as follows:

Cities of Richmond & Berkeley - 1% per year; City of Oakland 1/2% per year.

Table J.9-5
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
No Project Alternative

		1 .		
		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
·		(2010)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	31,270	44	16.4
2. Gilman Street	Berkeley	21,830	46	11.4
3. Camelia Street	Berkeley	2,280	46	1.2
4. Cedar Street	Berkeley	4,280	46	2.2
5. Virginia Street	Berkeley	1,980	46	1.0
6. Hearst Avenue	Berkeley	7,220	46	3.8
7. Addison Street	Berkeley	2,280	46	1.2
8. Bancroft Way	Berkeley	2,280	46	1.2
9. 67th Street	Emeryville	2,280	56	1.7
10. 66th Street	Emeryville	2,280	56	1.7
11. 65th Street	Emeryville	3,080	56	2.3
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996

Table J.9-6
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Maximum Marine/Maximum Rail Alternative

		Nur	nber of T	rains in	Both Directio	ns	Train Spe	ed (mph)
Crossing Street	Passe	enger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300	1	l	Switchers
Cutting Boulevard	4	20	26			50	60	60
2. Gilman Street	4	20	26	2	2	54	60	60
3. Camelia Street	4	20	26	2	2	54	60	60
4. Cedar Street	4	20	26	2	2	54	60	60
5. Virginia Street	4	20	26	2	2	54	60	60
6. Hearst Avenue	4	20	26	2	2	54	60	60
7. Addison Street	4	20	26	2	2	54	60	. 60
8. Bancroft Way	4	20	26	2	2	54	60	60
9. 67th Street	4	20	26	2	2	54	45	45
10. 66th Street	4	20	26	2	2	54	45	45
11. 65th Street	4	20	26	2	2	54	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	- 30	4	4	•	48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-7
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Maximum Marine/Maximum Rail Alternative

	Ga	te Down	Time Pe	er Train (minutes)	Total Gate
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	56
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	59
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	59
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	59
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	- 59
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	59
7. Addison Street	0.7	0.6	1.6	0.7	0.6	59
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	59
9. 67th Street	0.8	0.7	2.0	0.8	0.6	72
10. 66th Street	0.8	0.7	2.0	0.8	0.6	72
11. 65th Street	0.8	0.7	2.0	0.8	0.6	72
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-8
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Maximum Marine/Maximum Rail Alternative

Crossing Street	Jurisdiction	Average Daily Traffic	Total Gate Down Time	Vehicular Delay
J		(2010)	(min./day)	(hours/day)
1. Cutting Boulevard	Richmond	31,270	56	23.0
2. Gilman Street	Berkeley	21,830	59	16.3
3. Camelia Street	Berkeley	2,280	59	1.7
4. Cedar Street	Berkeley	4,280	59	3.2
5. Virginia Street	Berkeley	1,980	59	1.5
6. Hearst Avenue	Berkeley	7,220	59	5.4
7. Addison Street	Berkeley	2,280	59	1.7
8. Bancroft Way	Berkeley	2,280	59	1.7
9. 67th Street	Emeryville	2,280	72	2.5
10. 66th Street	Emeryville	2,280	72	2.5
11. 65th Street	Emeryville	3,080	72	3.4
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996

Table J.9-9
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Minimum Marine/Minimum Rail Alternative

		Nun	nber of T	rains in l	Both Direction	ns	Train Spe	ed (mph)
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	20	20			44	60	60
2. Gilman Street	4	20	20	2	2	48	60	60
3. Camelia Street	. 4	20	20	2	2	48	60	60
4. Cedar Street	4	20	20	2	2	48	60	60
5. Virginia Street	4	20	20	2	2	48	60	60
6. Hearst Avenue	4	· 20	20	2	2 ´	48	60	60
7. Addison Street	4	20	20	2	2	48	60	60
8. Bancroft Way	4	20	20	2	2	48	60	60
9. 67th Street	4	20	20	2	. 2	48	45	45
10. 66th Street	4	20	20	2	2	48	45	45
11. 65th Street	4	20	20	2	2	48	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4 .	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-10
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Minimum Marine/Minimum Rail Alternative

	Ga	ite Dowr	Time Po	er Train	(minutes)	Total Gate
Crossing Street	Passe	nger *	Frei	ght *	Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	47
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	49
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	49
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	49
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	49
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	49
7. Addison Street	0.7	0.6	1.6	0.7	0.6	49
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	49
9. 67th Street	0.8	0.7	2.0	0.8	0.6	60
10. 66th Street	0.8	0.7	2.0	0.8	0.6	60
11. 65th Street	0.8	0.7	2.0	0.8	0.6	60
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-11
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Minimum Marine/Minimum Rail Alternative

		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	31,270	47	18.0
2. Gilman Street	Berkeley	21,830	49	12.8
3. Camelia Street	Berkeley	2,280	49	1.3
4. Cedar Street	Berkeley	4,280	49	2.5
5. Virginia Street	Berkeley	1,980	49	1.2
6. Hearst Avenue	Berkeley	7,220	49	4.2
7. Addison Street	Berkeley	2,280	49	1.3
8. Bancroft Way	Berkeley	2,280	49	1.3
9. 67th Street	Emeryville	2,280	60	2.0
10. 66th Street	Emeryville	2,280	60	2.0
11. 65th Street	Emeryville	3,080	60	2.7
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996 Dowling Associates 1996

Table J.9-12
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Maximum Marine/Minimum Rail Alternative

	Number of Trains in Both Directions						Train Speed (mph)	
Crossing Street	Passe	Passenger *		ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	20	27			51	60	60
2. Gilman Street	4	20	27	2	2	55	60	60
3. Camelia Street	4	20	27	2	2	55	60	60
4. Cedar Street	4	20	27	2	2	55	60	60
5. Virginia Street	4	20	27	2	2	55	60	60
6. Hearst Avenue	4	20	27	2	2	55	60	60
7. Addison Street	4	20	27	2	2	55	60	60
8. Bancroft Way	4	20	27	2	2	55	60	60 [*]
9. 67th Street	4	20	27	2	2	55	45	45
10. 66th Street	4	20	27	2	2	55	45	45
11. 65th Street	4	20	27	2	2	55	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4.		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Table J.9-13
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Maximum Marine/Minimum Rail Alternative

	Ga	Total Gate				
Crossing Street	Passenger *		Freight *		Switchers *	Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	58
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	61
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	61
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	61
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	61
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	61
7. Addison Street	0.7	0.6	1.6	0.7	0.6	61
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	61
9. 67th Street	0.8	0.7	2.0	0.8	0.6	74
10. 66th Street	0.8	0.7	2.0	0.8	0.6	74
11. 65th Street	0.8	0.7	2.0	0.8	0.6	74
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Table J.9-14
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Maximum Marine/Minimum Rail Alternative

		Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	31,270	58	23.9
2. Gilman Street	Berkeley	21,830	61	16.9
3. Camelia Street	Berkeley	2,280	61	1.8
4. Cedar Street	Berkeley	4,280	61	3.3
5. Virginia Street	Berkeley	1,980	61	1.5
6. Hearst Avenue	Berkeley	7,220	61	5.6
7. Addison Street	Berkeley	2,280	61	1.8
8. Bancroft Way	Berkeley	2,280	61	1.8
9. 67th Street	Emeryville	2,280	74	2.6
10. 66th Street	Emeryville	2,280	74	2.6
11. 65th Street	Emeryville	3,080	74	3.5
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down-time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

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Table J.9-15
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Reduced Harbor Fill Alternative

		Nun	nber of T	rains in	Both Direction	าร	Train Spe	ed (mph)
Crossing Street		nger *	Frei	ght *	Switchers *	Total	Passenger	Freight/
	1200	600	6000	1200	300			Switchers
Cutting Boulevard	4	20	27			51	60	60
2. Gilman Street	4	20	27	2	2	55	60	60
3. Camelia Street	4	20	27	2	2	55	60	60
4. Cedar Street	4	20	27	2	2	55	60	60
5. Virginia Street	4	20	27	2	2	55	60	60
6. Hearst Avenue	4	20	27	2	2	55	60	60
7. Addison Street	4	20	27	2	2	55	60	60
8. Bancroft Way	4	20	27	2	2	55	60	60
9. 67th Street	4	20	27	2	2	55	45	45
10. 66th Street	4	20	27	2	2	55	45	45
11. 65th Street	4	20	27	2	2	55	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4.		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	- 60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

^{*} Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.9-16
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Reduced Harbor Fill Alternative

	Ga	Gate Down Time Per Train (minutes)				
Crossing Street		nger *		ght *	Switchers *	Total Gate Down Time
	1200	600	6000	1200	300	(min./day)
Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	58
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	61 ·
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	61
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	61
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	61
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	61
7. Addison Street	0.7	0.6	1.6	0.7	0.6	61
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	61
9. 67th Street	0.8	0.7	2.0	0.8	0.6	74
10. 66th Street	0.8	0.7	2.0	0.8	0.6	74
11. 65th Street	0.8	0.7	2.0	0.8	0.6	74
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

^{*} Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

^{**} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

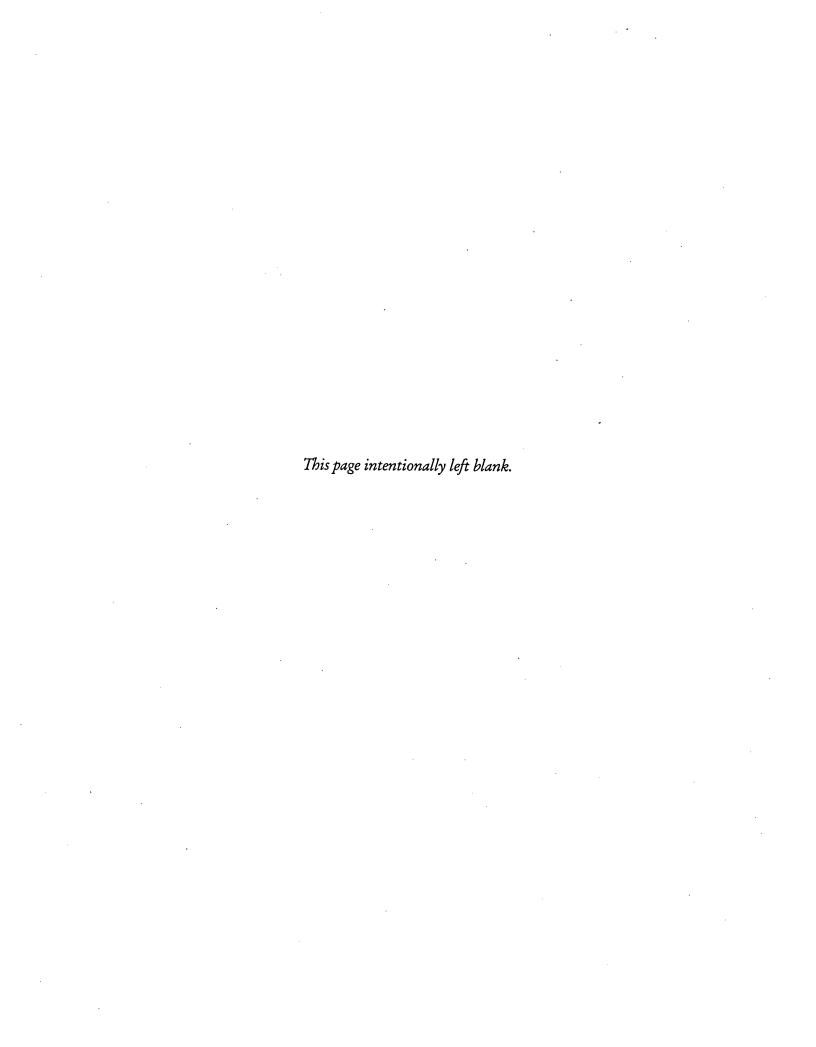
Table J.9-17
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Reduced Harbor Fill Alternative

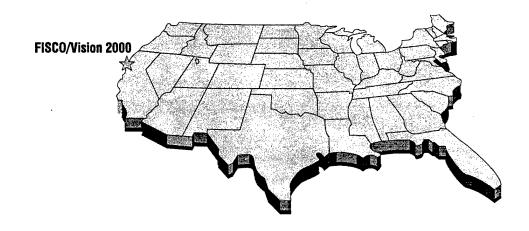
	<u></u>	. Averere	Total Cata	Valsiandaa
Crassing Street	1	Average	Total Gate	Vehicular
Crossing Street	Jurisdiction	Daily Traffic	Down Time	Delay
		(2010)	(min./day)	(hours/day)
Cutting Boulevard	Richmond	31,270	58	23.9
2. Gilman Street	Berkeley	21,830	61	16.9
3. Camelia Street	Berkeley	2,280	61	1.8
4. Cedar Street	Berkeley	4,280	61	3.3
5. Virginia Street	Berkeley	1,980	61	1.5
6. Hearst Avenue	Berkeley	7,220	61	5.6
7. Addison Street	Berkeley	2,280	61	1.8
8. Bancroft Way	Berkeley	2,280	61	1.8
9. 67th Street	Emeryville	2,280	74	2.6
10. 66th Street	Emeryville	2,280	74	2.6
11. 65th Street	Emeryville	3,080	74	3.5
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	. 19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

^{*} Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

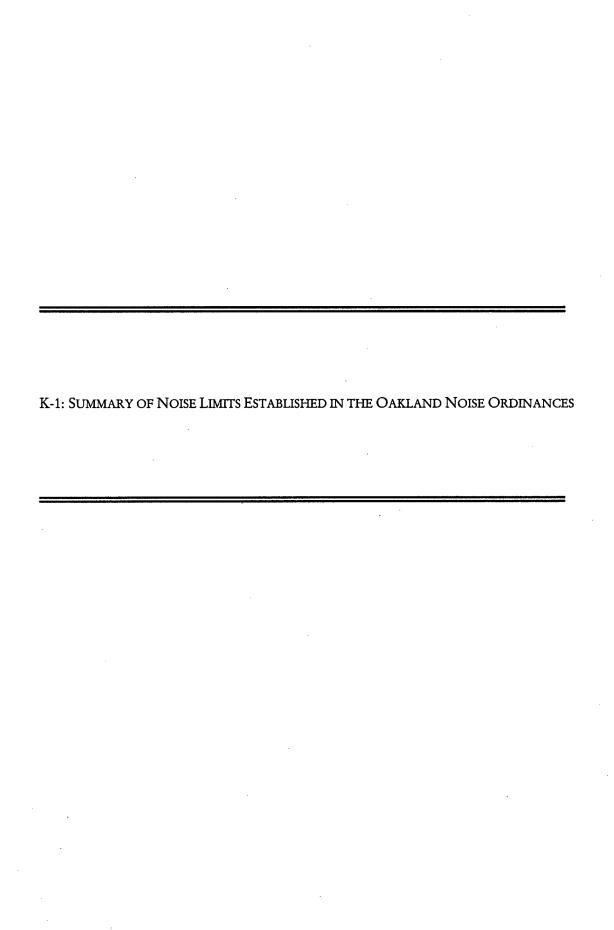
 $\label{thm:convex} \textbf{Sources: City Traffic/Planning staffs for the jurisdictions shown.}$

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APPENDIX K NOISE



Appendix K Noise

Table K-1
Summary of Noise Limits Established in the Oakland Noise Ordinances

Noise Source	Affected Properties	Time Period	Specified or Equivalent Noise Limits
Construction and	Residential land uses, on		80 dBA, maximum
demolition activities lasting less than 10 days	weekdays	-	65 dBA maximum; 50 dBA, 1-hr Leq
·	Residential land uses, on	9 am - 8 pm	65 dBA, maximum
	weekends and federal holidays land uses, on weekdays	8 pm - 9 am	65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial and Industrial	7 am - 7 pm	85 dBA, maximum
	land uses on weekdays		85 dBA maximum; 70 dBA, 1-hr Leq
	Commercial and Industrial		70 dBA, maximum
	land uses, on weekends and federal holidays	8 pm - 9 am	85 dBA maximum; 70 dBA, 1-hr Leq
Construction and	Residential land uses, on	7 am - 7 pm	65 dBA, maximum
demolition activities lasting 10 days or more	weekdays		65 dBA maximum; 50 dBA, 1-hr Leq
	Residential land uses, on		55 dBA, maximum
	weekends and federal holidays	8 pm - 9 am	65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial and industrial	7 am - 7 pm	70 dBA, maximum
	land uses, on weekdays		85 dBA maximum; 70 dBA, 1-hr Leq
	Commercial and industrial		60 dBA, maximum
	land uses, on weekends and federal holidays	8 pm - 9 am	85 dBA maximum; 70 dBA, 1-hr Leq
Residential air conditioning	All properties	Any time	55 dBA, maximum
units installed before June 11, 1996	• •	,	
Residential air conditioning units installed after June	All properties	Any time	50 dBA, maximum
11, 1996			
Enclosed commercial refrigeration units within	Residential land uses	10 pm - 7 am	60 dBA, maximum outside enclosure
200 feet of residential properties			

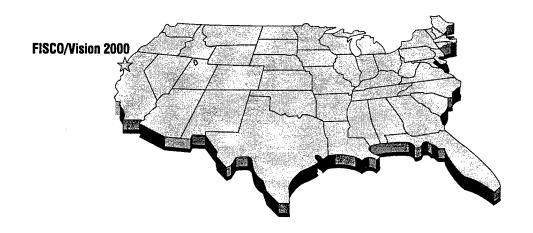
Noise Source	Affected Properties		Specified or Equivalent Noise Limits
Other stationary or mobile commercial refrigeration units	Residential and Civic land uses		80 dBA maximum; 65 dBA, 1-hr Leq 65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq
Enclosed commercial ventilation exhaust systems within 200 feet of residential properties	Residential land uses	10 pm - 7 am	60 dBA, maximum outside enclosure
Other commercial exhaust	Residential and Civic land	7 am - 10 pm	80 dBA maximum; 65 dBA, 1-hr Leq
ventilation systems	uses	10 pm - 7 am	65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq
Sound amplification equipment (including portable or car audio equipment) operated in any park without a permit	Parks and adjacent property	Any time	Audible at a distance of 50 feet or more from the noise source
Sound amplification equipment operated in any park under terms of a valid permit	Adjacent to park boundaries	Any time	80 dBA, maximum
Testing of stationary alarms		7 am - 7 pm	No more than 60 seconds
or other emergency signaling devices		7 pm - 7 am	
Testing of complete		7 am - 10 pm	No more than once each month
emergency response systems including signaling devices		10 pm - 7 am	Prohibited
Activated burglar and fire alarms (including car alarms)		Any time	Must be deactivated within 15 minutes
Stationary non-emergency signaling devices, bells, whistles, etc. (excluding devices at churches and schools)		Any time	No more than 10 seconds in any hour

Noise Source	Affected Properties	Time Period	Specified or Equivalent Noise Limits
Loading and unloading activities	Residential land uses		Must not create a noise disturbance or exceed general noise limits in the Oakland Planning Code
Domestic power tools and machinery	Any land use	9 pm - 6 am	Must not create a noise disturbance or exceed general noise limits in the Oakland Planning Code
Noise sources not specifically covered by other limits (general Planning	Residential and Civic land uses		80 dBA maximum; 65 dBA, 1-hr Leq 65 dBA maximum; 50 dBA, 1-hr Leq
Code limits)	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq

Oakland Ordinance 11894 also contains general prohibitions against excessive or annoying noise and vibration. Federal and state law generally preempt local regulation of traffic, rail, and aircraft noise. Note:

Source: City of Oakland Ordinances 11893, 11894, and 11895.

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APPENDIX L HAZARDOUS WASTE AND MATERIALS

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Table L-1 1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
511D	511D	fuel, diesel	83.967
511D	511D	fuel, unleaded gasoline	92,463
320	321	detergents	200
511	511	cleaners deodorizers	1,377 459
123	123W	acetylene antifreeze hydraulic fluid solvents	368 1,027 108 860
123	123E	lubricants adhesives glazing compound herbicides joint compound sealers	890 500 128 302 417 542
		solvents	644
542	542	acetone	360
		adhesives brake fluid	1,517
		cement	132 490
		citric acid	3,200
		cleaners	76,238
		coating compounds	3,752
		coolant fluid	16,360
		corrosion prevention compd.	2,435
		deodorizers	241
		deoxidizer	1,848
		descaler	3,246
		detergent	4,798
		disinfectant	416
		fire extinguisher	832
		floor wax	6,053
		grease	3,677
		isopropyl alcohol	1,296
		hydraulic fluid	35,551
		ion exchange compound	872
		masonry surface conditioner	1,620
		methyl ethyl ketone	306

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		oil	6,623
		paint	41,860
		polish	456
		sealers	2,239
		sodium hypochlorite	1,140
		solvents	11,876
		strippers	2,523
		sulfuric acid	187
		tetrachloroethylene	24,127
		thinners	502
		toluene	1,052
		trichloroethane	2,006
		wire rope exposed	525
310	310	Amerold OSC	200
		cleaners	1,196
		detergents	1,400
		fire extinguisher	100
		floor wax	625
		freon	390
		magnesium chloride	320
		oil	100
		paint	500
		polish	180
		refractory mix	1,310
		sealant	250
		thinner	500
711	711	absorbents	8,440
		acetylene	10,977
		activated desiccant	2,090
		adhesives	2,232
		isopropyl alcohol	210
		ammonia	18,407
		antifreeze	39,400
		argon	23,370
		brake fluid	2,800
		calibration fluid	1,050
		carbon dioxide	66,833
		carbon removal compd.	1,400
		caulking compd.	120
	1	cement	120
		chlorine	159,300

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		cleaners	38,010
		coating compounds	3,205
		corrosion prevention compound	1,963
,		cutting fluid	1,272
		detergent	29,180
		developers	420
		disinfectants	3,552
		ethyl acetate	945
		fire extinguisher	1,700
	•	fixers	2,790
		floor wax	4,436
		freon	152,668
		grease	241,674
		helium	
			44,735
		hydraulic fluid	143,897
		hydrogen	156,100
		inspection penetrants	620
		insulating compounds.	20,106
		ion exchange compound	361,550
		laundry starch	1,840
		leak test/detect compound	11,623
		lubricants	495
		mercury	180
		nitrogen gas	177,920
		oils	41,600
		oxygen gas	124,091
•		paint	3,540
'		pesticides	1,992
:		petroleum	920
		potassium carbonate	3,200
		potassium hydroxide	9,426
		propane	4,160
		sealers	950
		silicone compounds.	110
		sodium chloride	1,800
		sodium hydroxide	800
		solvents	31,760
		spackling paste	315
		strippers	4,900
		thinners	180
	•	titrating solutions	812
		toners	1,230

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
342	342	absorbents caulking compound cleaners	606 1,200 400
		concrete	1,840
]		moisture displacer	105 450
		silicone compounds.	220
		solvents	324
		stucco mix	180
441	441 B	lubricants solvents	156 550
533	533	concrete	4,800
		sealers	900
		solvents	440
534	534	abrasive blasting materials	2,500
		glass traffic beads	1850
541	541	absorbents	1,000
		adhesives	4,896
		cement	13,217
		drywall compound	7,565 216
		grease lubricants	1,345
		oil	389
		paint	200
		roof sealing compound	1,700
		sealers	1,477
]	•	thinners	1,044
}		urethane	209
		welding rods	209
833	833	acetylene	1,460
		adhesives	100
		antifreeze	220
		cement	1,280
		cleaners	1,648
		corrosion prevention compound	440
		grease	3,780
	2	hydraulic fluid	14,140
		oil	24,748
		oxygen gas	2,200

Table L-1 (continued) 1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)	
		paint solvents thinners	454 3,064 180	

pounds = pounds per year Source: US Navy 1996th

L-5

TABLE L-2. PHASES OF THE CERCLA REMEDIATION PROCESS

Phases of the CERCLA remediation process are described below.

Site Discovery (SD). A site is an area that has had or has the potential for a hazardous substance release. A single facility may contain several sites to be studied under the IRP. Occasionally, potential sites are discovered by searching through records or during construction projects.

Preliminary Assessment (PA). This assessment identifies areas of potential contamination and evaluates each area to determine if a threat to human health or the environment exists. A PA report is developed from readily available information, such as past inventory records, aerial photographs, employee interviews, existing analytical data, and an activity visit. A PA may recommend no further action, additional work under the IRP, or a removal action.

Site Inspection (SI). This inspection is conducted after the PA when additional information is needed to evaluate a site. The collection and analysis of soil, sediment, and surface and ground water samples may help to determine the need for further study. Information needed for hazard ranking also is collected. An SI may recommend a site for no action, further study, or an immediate removal action. The PA and SI are often performed concurrently.

Hazard Ranking System (HRS). This system provides a uniform method of scoring or ranking the potential risk of a site where a hazardous substance has been present. A site in this context refers to the entire FISCO complex. The EPA developed the HRS to prioritize clean-up efforts. The EPA evaluates the draft HRS packages and proposes any facility scoring 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities that are listed on the NPL receive the highest priority. FISCO is not on the NPL.

Removal Actions (RO). In the event of an immediate threat or potential threat to human health or the environment, a short-term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spots and their source from all biological receptors. Usually, removal actions do not completely clean up a site, and additional remediation steps are required.

Remedial Investigation (RI). This investigation is performed to more fully define the nature and extent of the contamination at a site and to evaluate possible methods of cleaning up the site. During the investigation, ground water, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of the contamination. The RI process at FISCO is typically done in two phases—Phase I, site characterization and Phase II, characterization of the constituents of concern, the migration pathways, and the potential hazards to human health and the environment.

Feasibility Study (FS). The feasibility study identifies and evaluates all applicable site cleanup alternatives. As part of the study, a risk assessment is performed to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Typically, the RI and FS are performed concurrently.

Remedial Action Plans (RAP)/Record of Decision (ROD). These two documents are essentially the same. RAP is the state term while ROD is federal. The RAP/ROD documents the reasoning behind the selection of a particular cleanup alternative. A RAP/ROD is required even if the most feasible alternative is no action.

Remedial Design (RD). After the RAP/ROD is signed, the remedial design phase can begin. In the RD, specific construction parameters and/or equipment specifications are presented for the selected cleanup alternative.

Remedial Action (RA). During the remedial action phase, the selected cleanup technology is implemented. RA can be as simple as soil excavation or as complicated as a complete ground water treatment system which may operate for many years. Remedial action work plans for long-term remediations include operation and maintenance (O&M) plans. O&M efforts continue until the cleanup is complete.

Long-term Monitoring. After completion of the RA, federal, state, or local regulatory agencies may require subsequent monitoring of the site.

TABLE L-3. FISCO INSTALLATION RESTORATION PROGRAM SITES

The following is a brief discussion of the ten remedial investigation (RI) sites and the remediation areas based on the information presented in the final scoping plan (US Navy 1992b) the Final Environmental Baseline Survey (EBS) (US Navy 1996h) and the Final Base Realignment and Closure Cleanup Plan (BCP) (US Navy 1996i).

Remedial Investigation Area I

Area 1 consists of sites IRP 01 (Lot 612), IRP 03 (Building 511E), IRP 12 (former location of Building 414), IRP 13 (former location of Building 411), and IRP 14 (Buildings 511 and 511B). A brief description of each IRP site is as follows.

IRP 01: Lot 612 - Hazardous Waste Storage Lot. Lot 612 is located in the northeastern portion of FISCO and consists of three large buildings (Buildings 612, 612A, and 612C) and three small buildings (612B, 612E, and 612F) surrounded by an open area. This RI site was used by the Defense Reutilization and Marketing Office (DRMO) as a scrapyard and storage area for materials from military installations throughout the Bay Area up to 1980. Materials stored and staged at this site include hazardous wastes, such as paints, waste solvents, pesticides, halogenated and nonhalogenated solvents, thinners, corrosives, and heavy metal sludge. In addition, PCBs also may have been stored at this site. In 1981, Public Works Center (PWC) took over the site and had a private contractor remove and dispose of all on-site waste (US Navy 1992b).

As part of the SI, 14 soil borings were drilled in the vicinity of the eight wooden 20 feet by 20 feet open storage bins and the staging area location northeast of the bins, and 26 soil samples were collected. Analytical results for the soil samples indicate that petroleum hydrocarbons, such as diesel and toluene, are present in the soil at this site. In addition, some solvents, such as acetone and vinyl chloride, were detected (US Navy 1992b).

According to the remedial phase I investigation report, one surface soil samples was collected east of Building 612-B. Analytical results indicated that the concentrations for seven metals, including lead, exceeded preliminary remediation goals (PRG) for residential land uses. In addition, the arsenic concentration in this sample exceeded PRGs for industrial land uses (US Navy 1995d).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of lead and mercury-contaminated surface soil is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 03: Building 511-E - Stained Oil Areas. Building 511-E is located in the northeastern portion of FISCO and consists of a building and concrete pad, which were constructed in 1942. The building was used up to 1950 as a rigging loft for cranes. Since 1980, the area immediately surrounding Building 511-E was used for

handling materials that required redrumming or overpacking. Between 1980 and 1983, this area was used to redrum waste materials (US Navy 1992b).

Four soil borings were drilled at the site as part of the SI, and soil samples were collected. Analytical results for the soil samples indicated that petroleum hydrocarbons, volatile organic compounds (VOCs), and semivolatile compounds (SVOCs) were detected in the soil (US Navy 1992b).

According to the remedial phase I investigation report, two sludge samples were collected from a drainage sump adjacent to Building 511B. High concentrations of solvents, SVOCs, petroleum hydrocarbons and lead were reported to have been detected in these samples (US Navy 1995d).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of asphalt contaminated with lead is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 12: Former Building 414 - Transportation Maintenance Shop and Lot. IRP 12 is located in located the north central portion of FISCO and consists of building 414 a surrounding lot. The structure was constructed in the 1940s and was used for storage up to 1984. The building was later used for maintenance activities on Navy vehicles and equipment from 1984 to 1989. The building was condemned after the 1989 Loma Prieta earthquake and later demolished. Based on the PA conducted 1991, a Phase I RI was conducted at this IRP site. Currently a Phase II RI/FS is pending (US Navy 1992b; US Navy 1996i).

IRP 13: Former Building 411 - Transportation Maintenance Shop and Lot. IRP 13 is located in the northern portion of FISCO and consists of a building surrounded by an open area. The site was used up to 1989 as a maintenance area for vehicles and light equipment. The building was condemned after the 1989 Loma Prieta earthquake. Five hydraulic lifts and two waste oil underground storage tanks (USTs) (Tanks 411-1 and 411-2) were located at the site. The USTs were removed in the fall of 1992 as part of the Navy Clean Contract (US Navy 1992b; US Navy 1996i).

As part of the SI, seven soil borings were drilled at the site. Soil and ground water samples were collected, and the analytical results for the soil samples indicated that petroleum hydrocarbons, VOCs, and SVOCs were present in the soil at this site. VOCs were detect in some of the ground water samples collected from the site (US Navy 1992b).

Currently, a phase II RI/FS and field scale pilot test are to be conducted at this site (US Navy 1996i).

IRP 14: Buildings 511 & 511B - Heavy Equipment Repair. IRP 14 site is located in the northern portion of FISCO. The site consists of two buildings surrounded by

an open lot. Building 511 was used as a locomotive repair shop from 1942, when it was constructed, to 1975. This building was later used as a repair shop for heavy equipment from 1975 to 1989. Currently, this building is used to store and classify recyclable dry goods, such as paper and cardboard. Building 511-B was used up to 1989 as an automobile and small truck wash (US Navy 1992b).

Four USTs formerly were located at this site—two 12,300-gallon diesel USTs (Tanks 511F-1 and 511F-2), one 2,300-gallon gasoline UST (Tank 511F-3), and one 750-gallon waste oil UST (Tank 511-1). The USTs were removed in the fall of 1992 as part of the Navy Clean contract. Analytical results for the soil samples collected during the UST removal activities indicated that a release of petroleum hydrocarbons has occurred in the vicinity of the USTs.

Under the SI, six soil borings were drilled in the vicinity of the USTs, oil water separator, and the shop drains. Soil, ground water, and sludge samples were collected during the SI investigation. Analytical results for the soil and ground water samples indicate the presence detectable concentrations of VOCs, SVOCs, petroleum hydrocarbons, and metals (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

Remedial Investigation Area II

Area II consists of IRP 02 (former Buildings 740C and 738), IRP 15 (Lots 642, 643, and 644), and IRP 21 (Lot 645). A brief discussion of each site follows.

IRP 02: Buildings 740C and 738 - Stained Soil Areas. IRP 02 is located in the southeastern part of the FISCO and consists of two attached buildings (Buildings 740C and 738), a closed Imhoff tank and one 3,600-gallon UST (Tank 740). The western ends of the buildings were used to stage equipment, drums, and materials, which included lubricants, solvents, paints, and motor oil. The buildings were used as an auto hobby shop until they were closed in 1985 due to structural problems. Wastes from automotive repair, such as sandblasting grit, lubricants, solvents, and paints, were reportedly disposed of in an unpaved area surrounding the Imhoff tank. Tank 740 was removed in the fall of 1992 as part of the Navy Clean Contract (US Navy 1992b).

Seven soil borings were drilled and one composite surface sample was collected at the site as part of the SI. Based on the analytical results for the soil and ground water samples collected, petroleum products, VOCs, SVOCs, and metals were detected in the soil and ground water samples (US Navy 1992b).

Based upon the results of the sampling data, a phase II RI/FS was recommended at Building 740C and Building 738 to develop remedial alternatives, to delineate the extent of contamination, to determine the source of contamination and potential pathways, and to evaluate metals in the ground water (US Navy 1996i).

IRP 15: Lots 642, 643, and 644 - Petroleum Based Products and Cleaning Solvent Storage. IRP 15 is located in the southern portion of FISCO and consists of three paved lots separated by a railroad spurs. These lots were used as a drum storage area for petroleum-based products and cleaning solvents. Materials included oils, hydraulic fluids, antifreeze, and to a lesser extent, dry cleaning solvents, malathion, and insulating oils. The pavement in this area has been stained due to minor spills and leaks from drums previously stored at this site (US Navy 1992b).

A soil gas survey was conducted at this site in the fall of 1990 as part of the SI. Twenty-five sample locations were selected, and VOCs were detected in the soil gas samples collected from several of the sampling locations. An additional fourteen soil borings were drilled, and soil and ground water samples were collected. Analytical results for the soil and ground water samples indicated detectable concentrations of petroleum hydrocarbons, VOCs, and SVOCs. No inorganic analytical data for soils were available for lots 642, 643, and 644 (US Navy 1992b).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with petroleum compounds is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 21: Lot 645 · Open Storage Area. Lot 645 is located in the south central portion of FISCO. This area has been used to store large bulky ship parts, such as propellers, rudder components, and proper drive shafts. During the 1991 environmental assessment conducted at this site, field personnel noted a greenish gray sand (sand blasting grit) covering much of the surface in the western portion of the site. Based on surface soil sampling, this sand blasting grit was reported to contain elevated metal concentrations, and the soil in this area was removed under a RO in November 1994 (US Navy 1996h; US Navy 1996i).

Remedial Investigation Area III

Area 3 consists of IRP 18 (Building 534) and IRP 20 (Lot 532). A brief discussion of each site follows.

IRP 18: Building 534 - Paint Shop Accumulation Area. IRP 18 is located in the central portion of FISCO and consists of a building surrounded by a lot. This site was used for painting and sandblasting. Paint and solvents were stored in the lot adjacent to the building (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

IRP 20: Lot 532 - Former 90-Day Hazardous Waste Accumulation Area. IRP 20 is located in the central portion of FISCO and consists of an open area surrounding a shed. This site was reported to have been used as a 90-day accumulation area for hazardous waste (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

Miscellaneous IRP Sites

IRP 04: Lot 111: PCB Transformer Storage Area. IRP 04 is located in the northwestern portion of FISCO, and consists of a single building and concrete pad, which was used to store electrical equipment and some pesticides from 1942 until the 1980s. Since the 1980s, it has only been used to store new electrical transformers. Based on the analytical results from a composite soil sample collected at the site, pesticides and PCBs have been detected in the soil (US Navy 1992b).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with PCBs is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 05: Building 431 - Hazardous Materials Classification. Building 431 is located in the central portion of FISCO and has been primarily used since 1985 to classify and temporarily store hazardous materials for up to 90 days. Hazardous materials handled at this site include combustible liquids, petroleum products, corrosives, oxidizers, peroxides, calcium, sodium nitrates, and lead paints. In addition to the handling of hazardous materials, dip tanks located in the eastern portion of the building were used for various metal processing operations, such as degreasing. Prior to 1985, this site was used as a general storage area. A limited scope expanded site inspection (ESI) has been proposed in the vicinity of the dip tanks at this site (US Navy 1992b).

IRP 17: Buildings 721, 722, 723, 731, 732, and 733 - Navy Resale Warehouse Buildings. IRP 17 is located in the eastern portion of FISCO, and consists of six buildings, which are used to store large quantities of various bulk goods for distribution to Navy exchange stores. Currently this site is being investigated for radiological contamination. Once the radiological assessment is completed, and assuming no contamination is discovered, this site will be designated as a no action site (US Navy 1996i).

IRP 19: Building 710 - The Public Works Center Maintenance Area. Building 710B is located in the northeastern portion of FISCO and is used as the PWC maintenance area for the operation of the storm drain system, heavy equipment storage, and office space. Hazardous materials or wastes generally are not stored or handled at this site; however, the surface in several areas of the site is stained with oil. In addition, floating oil was occasionally observed in the sewer and an old PCB spill was cleaned up at this site in the late 1970s. A limited scope ESI was conducted and the site was recommended for RO (US Navy 1992b; US Navy 1996i).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with PCBs is scheduled to be completed in the summer of 1996 (US Navy 1996i).

Table L-4
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM	
1	243	Yes, Non-Friable	
1	343	Yes, Non-Friable	
1	443	Yes, Non-Friable	
1	543	Friable ACM Suspected	
1	633	Yes, Non-Friable	
1	642	ACM Not Suspected	
1	649	Yes, Non-Friable	
1	730	Yes, Non-Friable	
1	Shed 443	ACM Not Suspected	
2	741	Yes, Non-Friable	
2	742	Friable ACM Suspected	
2	746	Friable ACM Suspected	
2	<i>7</i> 50	Yes, Non-Friable	
2	754	Friable ACM Suspected	
2	755	Yes, Non-Friable	
2	834	Yes, Non-Friable	
2	841	Yes, Non-Friable	
2	842	Yes, Non-Friable	
2	844	Friable ACM Suspected	
2	845	Yes, Non-Friable	
2	846	Yes, Non-Friable	
2	848	Yes, Non-Friable	
2	850	ACM Not Suspected	
2	742A	Yes, Non-Friable	
2	841A	Friable ACM Suspected	
. 2	841B	Yes, Non-Friable	
2	841C	Friable ACM Suspected	
2	841G	ACM Not Suspected	
2	841H	ACM Not Suspected	
3	612	Yes, Non-Friable	
3	700	ACM Not Suspected	
3	710	Yes, Non-Friable	
3	711	Yes, Non-Friable	
. 3	712	Yes, Non-Friable	
3	721	Yes, Non-Friable	
3	722	Yes, Non-Friable	
3	723	Yes, Non-Friable	

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM
3	724	Yes, Non-Friable
3	731	Yes, Non-Friable
3	732	Yes, Non-Friable
3	723	Yes, Non-Friable
3	724	Yes, Non-Friable
3	821	Yes, Non-Friable
3	831	Friable ACM Suspected
3	833	Yes, Non-Friable
3	612A	Yes, Non-Friable
3	612B	Yes, Non-Friable
3	612C	Yes, Non-Friable
3	612E	Yes, Non-Friable
3	612F	Yes, Non-Friable
3	612H	ACM Not Suspected
3	622A	ACM Not Suspected
3	710A	Yes, Non-Friable
3	710B	Yes, Non-Friable
3	712C	Yes, Non-Friable
3	733A	Yes, Non-Friable
3	733B	Yes, Non-Friable
4	111	ACM Not Suspected
4	113	Friable ACM Suspected
4	114	ACM Not Suspected
4	116	ACM Not Suspected
4	122	Yes, Non-Friable
4	123	Yes, Non-Friable
4	131	Friable ACM Suspected
4	141	Friable ACM Suspected
4	221	Friable ACM Suspected
4	222	Friable ACM Suspected
4	223	Friable ACM Suspected
4	320	Friable ACM Suspected
4	321	Yes, Non-Friable
· 4	322	Friable ACM Suspected
4	323	ACM Not Suspected
4	324	ACM Not Suspected
4	325	ACM Not Suspected
4	331	Yes, Non-Friable

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM
4	332	Friable ACM Suspected
4	333	Yes, Non-Friable
4	341	Yes, Non-Friable
4	342	Yes, Non-Friable
4	421	Friable ACM Suspected
4	422	Yes, Non-Friable
4	431	Yes, Non-Friable
4	432	Yes, Non-Friable
4	433	Yes, Non-Friable
4	441	Yes, Non-Friable
4	442	Yes, Non-Friable
4	521	Friable ACM Suspected
4	522	Friable ACM Suspected
4	531	Yes, Non-Friable
4	532	Yes, Non-Friable
4	533	Yes, Non-Friable
4	534	ACM Not Suspected
4	541	Yes, Non-Friable
4	542	ACM Not Suspected
4	112E	ACM Not Suspected
4	122A	Yes, Non-Friable
4	342A	Yes, Non-Friable
4	441A	Yes, Non-Friable
4	441B	Yes, Non-Friable
4	522A	Yes, Non-Friable
4	532B	Yes, Non-Friable
4	533B	ACM Not Suspected
4	211	Yes, Non-Friable
4	212	Yes, Non-Friable
4	213	Yes, Non-Friable
4	310	Friable ACM Suspected
4	311	Friable ACM Suspected
4	312	Friable ACM Suspected
4	313	Friable ACM Suspected
4	405	Yes, Non-Friable
4	410	Yes, Non-Friable
4	412	Friable ACM Suspected
4	413	Yes, Non-Friable

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM
4	500	Yes, Non-Friable
4	501	Yes, Non-Friable
4	502	Friable ACM Suspected
4	503	Yes, Non-Friable
4	504	Yes, Non-Friable
4	511	Friable ACM Suspected
4	512	Yes, Non-Friable
4	513	Yes, Non-Friable
4	311A	Yes, Non-Friable
4	412A	Yes, Non-Friable
4	505A	ACM Not Suspected
4	505B	ACM Not Suspected
4	511B	Yes, Non-Friable
4	511D	Yes, Non-Friable
4	511E	Yes, Non-Friable

Table L-5 FISCO Phase I RI Characterization Report Summary of Sampling Activities Area 1

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Soil Gas	28	03/06/94- 03/08/94	Geoprobe	On Site	VOC
Surface Soil	1	03/05/94	Disposable Trowel	Off Site	VOC, SVOC, TRPH, Metals
Subsurface Soil	34	03/17/94- 03/19/94	Geoprobe	On Site	Headspace VOCs(field screening)
Subsurface Soil	22	03/28/94- 03/29/94	Geoprobe	Off Site	VOCs SVOC, TRPH, TOC, Metals
Subsurface Soil	36	06/16/94- 06/21/94	Hollow Stem Auger	Off Site	VOC, SVOC, TRPH, TOC ¹ , Metals ² , TCLP ³ , Physical Parameter ³
Groundwater	5	04/07/94- 04/08/94 (temporary wells)	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, TRPH, Metals (total and dissolved)
Groundwater	9	06/26/94- 06/30/94	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, Metals (assorted), TRPH

¹TOC analysis was performed on 12 soil samples

VOC = Volatile organic compounds

SVOC = Semivolatile organic compounds

TRPH = Total recoverable petroleum hydrocarbon

²Metals analysis included CLP analysis plus mercury

³TCLP analysis was performed on five soil samples

⁴Physical parameters testing was performed on eight samples and included density, porosity, grain size analysis, total organic carbon, and pH.

Table L-6 FISCO Phase I RI Characterization Report Summary of Sampling Activities Area 2

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Subsurface Soil	12	03/11/94- 03/12/94	Geoprobe	On Site	VOC Headspace
Subsurface Soil	27	03/14/94- 03/15/94	Geoprobe	Off Site	VOC, SVOC, TRPH, Metals
Subsurface Soil	27	06/13/94- 06/15/94	Hollow Stem Auger	On Site	VOC, SVOC, TRPH, TOC ¹ , Metals ² , TCLP ³ , Physical Parameter ³
Groundwater	12	06/23/94 06/24/94 06/28/94	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, TRPH, Metals (dissolved)

¹TOC analysis was performed on six soil samples

VOC = Volatile organic compounds

SVOC = Semivolatile organic compounds

TRPH = Total recoverable petroleum hydrocarbon

²Metals analysis included CLP analysis plus mercury

³TCLP analysis was performed on five soil samples

⁴Physical parameters testing was performed on seven samples and included density, porosity, grain size analysis, total organic carbon, and pH.

Table L-7 FISCO Phase I RI Characterization Report Summary of Sampling Activities Basewide Investigation

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Subsurface Soil	27	03/16/94 03/17/94 03/19/94	Geoprobe	Off Site	CLP Metals
Subsurface Soil	29	03/31/94- 04/05/94	Hollow Stem Auger	Off Site	CLP Metals ¹ , TCLP ²
Groundwater	14	04/13/94- 04/20/94	Bailer/ Peristaltic Pump	Off Site	Metals ³ , TPH, TDS

¹Metals analysis included mercury

²TCLP analysis was performed on six soil samples

³ Metals analysis on groundwater included total and dissolved

CLP = Contact Laboratory Program

TCLP = Toxicity characteristic leaching procedure

TPH = Total petroleum hydrocarbon

TDS = Total dissolved solids

Table L-8
FISCO Phase I RI Characterization Report
Monitoring Well Construction Data
Area 1

Well	D -4 -	W. 11 D 41	C1	A: £	Elevation	Elevation
Number	Date Drilled ¹	Well Depth	Screened Interval	Aquifer Monitored	(ft above MLLW) ²	(ft above MLLW) ²
Number	Drillea.	(ft bgs)		Monitored	•	Ground Surface
A 4	04 /20 /04	12.0	(ft bgs)	Shallow	Top of Casing	
A1-	06/20/94	12.0	3.0-11.8	Snallow	15.51	13.54
MW01	24/44/24	42.0	2 2 4 2 2	61 11	45.00	42.44
A1-	06/16/94	13.0	3.0-12.8	Shallow	15.23	13.46
MW02				61 11		
A1-	06/16/94	13.0	3.0-13.0	Shallow	13.18	13.35
MW03						
A1-	06/16/94	11.0	3.0-11.0	Shallow	13.23	13.45
MW04						
A1-	06/16/94	12.0	3.0-11.8	Shallow	13.96	14.26
MW05			·····			
A1-	06/16/94	12.0	3.0-11.8	Shallow	15.42	13.50
MW06						
A1-	06/20/94	12.0	3.0-11.8	Shallow	15.77	13.76
MW07					, , , , , , , , , , , , , , , , , , ,	
A1-	06/20/94	15.0	3.0-14.8	Shallow	13.51	13.97
MW08						
A1-	06/21/94	12.0	3.0-11.8	Shallow	15.32	13.34
MW09	•					
A1	06/20/94	13.0	3.0-12.8	Shallow	15.38	13.39
MW10						
A1-	06/21/94	13.0	3.0-12.8	Shallow	14.67	12.75
MW11						
A1-	06/20/94	13.0	3.0-12.8	Shallow	14.80	12.90
MW12						
			Temp	orary Wells		
A1-	04/01/94	12.8	3.8-12.8	Shallow	14.96	13.65
MW02T						
A1-	03/29/94	11.7	1.7-11.7	Shallow	14.57	13.39
MW04T						
A1-	03/29/94	8.2	3.2-8.2	Shallow	15.60	13.41
MW06T						
A1-	03/29/94	12.7	2.7-12.7	Shallow	16.56	13.44
MW08T			· · · ·		1	
A1-	03/29/94	7.2	4.7-7.2	Shallow	15.97	13.18
MW09T						
A1-	04/01/94	10.2	0.5-10.2	Shallow	16.47	13.05
MW11T	01,02,71	1	3.5 24.2			
74T AA T T T					<u> </u>	1

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

Table L-9 FISCO Phase I RI Characterization Report Monitoring Well Construction Data Area 2

Well Number	Date Drilled ¹	Well Depth (ft bgs)	Screened Interval (ft bgs)	Aquifer Monitored	Elevation (ft above MLLW) ² Top of Casing	Elevation (ft above MLLW) ² Ground Surface
A2- MW01	06/15/94	8.3	3.0-8.1	Shallow	11.75	12.10
A2- MW02	06/15/94	15.0	5.0-14.8	Shallow	11.51	11.78
A2- MW03	06/15/94	13.0	3.0-13.0	Shallow	9.58	10.14
A2- MW04	06/14/94	13.0	3.0-13.0	Shallow	14.63	12.56
A2- MW05	06/14/94	13.0	3.0-13.0	Shallow	14.41	12.43
A2- MW06	06/15/94	9.5	3.0-9.3	Shallow	12.89	10.83
A2- MW07	06/13/94	, 11.6	3.0-10.8	Shallow	9.66	9.95
A2- MW08	06/13/94	8.5	3.0-8.5	Shallow	14.90	12.92
A2- MW09	06/15/94	10.0	3.0-9.8	Shallow	13.78	11.74

¹All Area 2 monitoring wells were cased with 2-inch PVC piping ²MLLW - mean lower low water

Table L-10 FISCO Phase I RI Characterization Report Monitoring Well Construction Data Area 2

Well Number	Date Drilled ¹	Well Depth (ft bgs)	Screened Interval (ft bgs)	Aquifer Monitored	Elevation (ft above MLLW) ² Top of Casing	Elevation (ft above MLLW) ² Ground Surface
A3- MW01	09/19/94	10.0	4.0-10.0	Shallow	NA³	12.77
A3- MW02	09/19/94	17.0	12.0-17.0	Shallo w	NA	11.95
A3- MW03	09/19/94	19.0	14.0-19.0	Shallow	NA	11.95
A3- MW04	09/20/94	8.0	3.0-8.0	Shallow	NA	12.99
A3- MW05	09/20/94	10.0	4.0-10.0	Shallow	NA	13.80
A3- MW06	09/20/94	8.0	3.0-8.0	Shallow	NA	12.51
A3- MW07	09/20/94	9.0	4.0-9.0	Shallow	NA	12.35
A3- MW08	09/20/94	10.0	4.0-10.0	Shallow	NA	13.50

¹All Area 3 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

³NA - not available Source: US Navy 1996a

Table L-11 Groundwater Elevations UST Sites 211, 331N, 331S, 331E, 332, 334, 511D, 750, 842, and 845

Well ID	Total Depth (btoc)	Screened Interval (btoc)	Well Head Elev (toc-msl)	Date Measured	DTW (btoc)	WL Elev (msl)
UST Site 211						•
211-MW1	14.2	4.0-13.0	13.43	1/24/95	4.84	8.59
211-MW2	14.8	4.5-13.5	12.85	1/24/95	4.16	8.69
211-MW3	14.8	3.5-12.5	13.09	1/24/95	4.25	8.84
UST Site 331N	1					
331N-MW1	14.3	4.0-14.0	112.00	8/17/95	4.59	107.41
				8/30/95	4.00	108.00
331N-MW2	14.5	4.0-14.5	111.47	8/17/95	4.16	107.31
				8/30/95	3.50	107.97
331N-MW3	14.6	4.1-14.1	111.82	8/17/95	4.32	107.50
				8/30/95	3.62	108.20
331N-HMW1	17.9	unknown	111.61	8/30/95	3.71	107.90
UST Site 331S						- I Will affairm
331S-MW1	13.6	3.6-12.6	12.54	1/25/95	4.40	8.14
·				8/18/95	4.50	8.04
331S-MW2	13.8	3.5-12.5	12.22	1/25/95	5.22	7.00
				8/18/95	5.65	6.57
331S-MW3	13.6	3.5-12.5	12.39	1/25/95	3.41	8.98
				8/18/95	3.17	9.22
UST Site 331E						
331E-MW1	14.0	3.5-12.5	12.49	1/26/95	4.48	8.01
,				8/18/95	4.48	8.01
331E-MW2	14.6	3.5-12.5	12.60	1/26/95	4.62	7.98
				8/18/95	5.05	<i>7</i> .55
331E-MW3	14.2	3.5-12.5	12.62	1/26/95	5.00	7.62
				8/18/95	5.41	7.21
UST Site 332				•		
332-MW1	13.6	3.5-12.5	12.05	1/24/95	6.67	5.38
332-MW2	13.5	3.5-12.5	12.08	1/25/95	5.65	6.43
332-MW3	13.8	3.5-12.5	12.04	1/25/95	6.13	5.91
UST Site 334						
334-MW1	15.0	4.5-14.5	112.22	8/18/95	7.14	105.08
· .				8/31/95	7.19	105.03
334-MW2	14.3	3.8-13.8	111.68	8/18/95	7.41	104.27
				8/31/95	6.80	104.88
334-MW3	20.0	4.5-19.5	111.70	8/18/95	7.25	104.45
				8/31/95	6.74	104.96

Table L-11 (continued)
Groundwater Elevations
UST Sites 211, 331N, 331S, 331E, 332, 334, 511D, 750, 842, and 845

		Screened	Well Head				
Well ID	Total Depth	Interval	Elev	Date	DTW	WL Elev	
	(btoc)	(btoc)	(toc-msl)	Measured	(btoc)	(msl)	
UST Site 511I)						
511D-MW1	14.8	3.5-12.5	13.95	1/20/95	4.21	9.74	
511D-MW2	15.0	3.5-12.5	12.49	1/20/95	3.11	9.38	
511D-MW3	14.5	3.5-12.5	13.17	1/20/95	4.00	9.17	
UST Site 750							
750-MW1	14.5	3.8-13.8	12.28	8/2/96	6.24	6.04	
750-MW2	13.3	2.8-12.8	12.28	8/2/96	6.21	6.07	
750-MW3	14.5	4.5-14.5	12.43	8/2/96	6.50	5.93	
UST Site 842							
842-MW1	13.2	2.9-12.9	13.09	1/20/95	3.11	9.98	
			·	3/30/95	3.24	9.85	
842-MW2	13.1	2.8-12.8	14.15	1/20/95	4.91	9.24	
				3/30/95	5.00	9.15	
842-MW3	13.6	3.4-13.4	12.69	1/20/95	3.17	9.52	
				3/30/95	3.92	8.77	
UST Site 845	UST Site 845						
845-MW1	14.0	3.8-13.8	14.14	1/23/95	3.90	10.24	
				3/30/95	4.06	10.08	
845-MW2	14.2	4.0-14.0	13.93	1/23/95	3.94	9.99	
				3/30/95	3.88	10.05	
845-MW3	13.5	3.3-13.3	14.31	1/23/95	4.19	10.12	
				3/30/95	4.39	9.92	

NOTES:

All measurements in feet.

KEY:

btoc - Below top of casing

toc = Top of casing

msl - Above mean sea level

DTW = Depth to water

WL = Water level

Source: ERM West Inc. 1996

Table L-12
FISCO Phase I RI Characterization Report
Monitoring Well Construction Data
Basewide Wells

Well	Date	Well Depth	Screened	Aquifer	Elevation	Elevation
Number	Drilled ¹	(ft bgs)	Interval	Monitored	(ft above MLLW) ²	(ft above MLLW)2
			(ft bgs)		Top of Casing	Ground Surface
BW-	04/13/94	11.5	1.5-11.5	Shallow	15.93	13.77
MW01		•				
BW-	04/13/94	12.0	4.0-12.0	Shallow	15.01	13.05
MW02						
BW-	04/01/94	9.4	4.5-9.5	Shallow	15.10	13.35
MW02						
BW-	04/01/94	8.9	3.0-9.0	Shallow	15.31	13.35
MW04						
BW-	04/01/94	9.0	3.0-9.0	Shallow	14.10	12.15
MW05					·	
BW-	04/01/94	18.1	3.3-18.3	Shallow	11.54	11.99
MW06						·
BW-	04/04/94	12.3	3.0-12.5	Shallow	14.43	12.47
MW07						·
BW-	04/04/94	8.2	3.0-8.0	Shallow	15.37	13.16
MW08						
BW-	04/05/94	9.8	3.0-10.0	Shallow	13.81	12.09
MW09						
BW-	04/07/94	13.4	3.0-14.0	Shallow	14.48	12.68
MW10						
BW-	04/08/94	19.8	14.8-19.5	Deep	15.69	13.77
MW11				<u>-</u>	•	
BW-	04/08/94	25.4	15.0-25.0	Deep	14.70	12.70
MW12	04/11/94			<u>-</u>		
BW-	04/12/94	28.7	18.0-28.5	Deep	14.10	12.67
MW13				•		
BW-	04/12/94	24.8	14.5-24.5	Deep	15.38	13.37
MW14				•	,	
BW-	04/13/94	25.9	15.0-25.0	Deep	15.35	13.44
MW15 ³			·	•		

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

Source: US Navy: 1996a

²MLLW - mean lower low water

³Monitoring well BW-BW15 was destroyed in June 1994

Table L-13
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	ТҮРЕ	SAMPLED	RESULTS
Building 310 Pen	C.O01	Liquid	4-18-93	8 ppm
Building 310 Pen	C.O02	Liquid	4-18-93	2 ppm
Building 310 Pen	C.O03	Liquid	4-18-93	9 ppm
Building 633	COS-148S01	Liquid	4-07-93	<1 ppm
Building 633	COS-148S01	Liquid	4-07-93	<1 ppm
Building 633	COS-148S03	Liquid	4-07-93	<1 ppm
Substation A	K6461229-304	Liquid	4-18-93	<1 ppm
Substation A	K6461229-305	Liquid	4-18-93	<1 ppm
Substation A	K6461229-301	Liquid	4-18-93	<1 ppm
Substation A	0159A7818-1	Liquid	4-18-93	<1 ppm
Building 123	75B3610	Dry	N/A	N/A
Building 141	A5373	Dry	N/A	N/A
Building 310	37401-001	Dry	N/A	N/A
Building 321	PQD-0282	Liquid	4-18-93	<1 ppm
Building 411	PRJ-0871	Liquid	4-18-93	<1 ppm
Building 422	G81E14475	Dry	N/A	N/A
Building 504	PVD-0313	Liquid	4-18-93	<1 ppm
Building 522	D6661-588	Dry	N/A	N/A
Building 542	PSA-0041	Liquid	4-21-93	<1 ppm
Lot 754	79A283052	Liquid	4-14-93	<1 ppm
Lot 754	83A170192	Liquid	4-14-93	<1 ppm
P-17A & B	83VLO37001	Liquid	4-18-93	<1 ppm
P-17A & B	83VLO37002	Liquid	. 4-18-93	<1 ppm
P-17A & B	83VLO37003	Liquid	4-18-93	<1 ppm
P-18A & B	83A020104	Liquid	4-18-93	<1 ppm
P-18A & B	83A020105	Liquid	4-18-93	<1 ppm
P-18A & B	83A020107	Liquid	4-18-93	<1 ppm
P-20D	85A123271	Liquid	4-18-93	<1 ppm
P-20D	85A130696	Liquid	4-18-93	<1 ppm
P-29A & B	83A020101	Liquid	4-18-93	<1 ppm
P-29A & B	83A020102	Liquid	4-18-93	<1 ppm
P-29A & B	83A020106	Liquid	4-18-93	<1 ppm
P-33	83A032145	Liquid	4-18-93	<1 ppm

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	ТҮРЕ	SAMPLED	RESULTS
P-33	83A032147	Liquid	4-18-93	<1 ppm
P-33	83A032149	Liquid	4-18-93	<1 ppm
P-46	83VLO36001	Liquid	4-18-93	<1 ppm
P-46	83VLO36002	Liquid	4-18-93	<1 ppm
P-46	83VLO36003	Liquid	4-18-93	<1 ppm
P-52	IZO6-481	Liquid	5-05-93	<1 ppm
P-52	IZO6482	Liquid	5-05-93	<1 ppm
P-52	IZO6483	Liquid	4-18-93	<1 ppm
P-69A	82A521676	Liquid	4-18-93	<1 ppm
P-69A	82A521674	Liquid	4-18-93	<1 ppm
P-69A	82A521675	Liquid	4-18-93	<1 ppm
P-7	LZ41584K74	Liquid	4-18-93	<1 ppm
P-84	86NLO11073	Liquid	4-18-93	<1 ppm
PIER 5s	01759-1	Dry	N/A	N/A
Removed B-754	886001169	Liquid	4-14-93	<1 ppm
Building 310 Pen	751-1981	Liquid	4-18-93	9 ppm
Building 844	X62-51221	Dry	N/A	N/A
Building 842	876011266	Liquid	4-22-93	<1 ppm
R. R. Weigh	83JB884024	Liquid	4-28-93	<1 ppm
Building 750	POE-0225	Liquid	4-21-93	<1 ppm
Building 141	14270-1	Liquid	4-22-93	11 ppm
Jst 534	R876011327	Liquid	4-22-93	<1 ppm
Building 312	886001434	Liquid	4-18-93	<1 ppm
Building 312	886001433	Liquid	4-18-93	<1 ppm
Building 310	886001491	Liquid	4-18-93	<1 ppm
Building 310 Pen	V89585	Dry	N/A	N/A
Building 642	83JA870088	Liquid	4-21-93	<1 ppm
Building 441A	83JA867089	Liquid	4-28-93	<1 ppm
Building 541	X228-51221	Dry	N/A	N/A
Building 533	43969	Dry	N/A	N/A
Building 532	43968-3	Dry	N/A	N/A
Building 531	43965-1	Dry	N/A	N/A
Building 441A	83JB875033	Liquid	4-13-93	<1 ppm

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	ТҮРЕ	SAMPLED	RESULTS
Building 712N	51221-2	Dry	N/A	N/A
Building 442	43967-1	Dry	N/A	N/A
Building 441	43967-2	Dry	N/A	N/A
Building 141	43965-2	Dry	N/A	N/A
Building 141	43968-1	Dry	N/A	N/A
Building 243	43965-3	Dry	N/A	N/A
Building 344	43966-4	Dry	N/A	N/A
Building 343	43968-4	Dry	N/A	N/A
Building 544	43966-1	Dry	N/A	N/A
Building 443	43966-3	Dry	N/A	N/A
Building 333	43968-2	Dry	N/A	N/A
Building 433	43966-2	Dry	N/A	N/A
Building 221	B-4513	Dry	N/A	N/A
Building 222	B-4510	Dry	N/A	N/A
Building 122	B-3672	Dry	N/A	N/A
Building 754	PQD-0285	Liquid	4-19-93	<1 ppm
N.M. PKL	PQD-0310	Liquid	4-19-93	<1 ppm
Building 122	B-3673	Dry	N/A	N/A
Building 113	PQC-0255	Liquid	3-31-93	<1 ppm
Building 113	PQC-0256	Liquid	3-31-93	<1 ppm
Building 213	B-3677	Dry	N/A	N/A
Building 320	PQB-0154	Liquid	4-18-93	<1 ppm
Building 211	PQD-0326	Liquid	4-18-93	<1 ppm
Building 311	57-10112	Liquid	4-18-93	<1 ppm
Building 311	PQJ-0857	Liquid	4-18-93	<1 ppm
Building 410	84JM331190	Liquid	4-18-93	<1 ppm
Building 502	PQD-0324	Liquid	4-18-93	<1 ppm
Building 505	PQD-0266	Liquid	4-18-93	<1 ppm
Building 511	B-3700	Dry	N/A	N/A
Building 311	B-3528	Dry	N/A	N/A
Building 311	B-3581	Dry	N/A	N/A
Building 312	PQC-0169	Liquid	4-27-93	<1 ppm
Building 311	B-3533	Dry	N/A	N/A

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	ТҮРЕ	SAMPLED	RESULTS
Building 311	B-3532	Dry	N/A	N/A
Building 513	B-3678	Dry	N/A	N/A
Building 521	PQC-0257	R-Temp	4-22-93	<1 ppm
Building 413	B-3434	Dry	N/A	N/A
Building 412	B-3524	Dry	N/A	N/A
Building 313	B-3523	Dry	N/A	N/A
Building 313	B-3527	Dry	N/A	N/A
Building 422	PML-1194	Liquid	4-22-93	<1 ppm
Building 112	UNK (x-467)	Liquid	4-07-93	<1 ppm
Building 212	B-3676	Dry	N/A	N/A
Building 322	PQD-0323	Liquid	4-18-93	<1 ppm
Building 331	B-3525	Dry	N/A	N/A
Building 131	PQB-0160	Liquid	4-22-93	<1 ppm
Building 131	PQB-0144	Liquid	3-30-93	<1 ppm
Building 131	PQD-0301	Liquid	4-22-93	<1 ppm
Building 332	B-4476	Dry	N/A	N/A
Building 421	B-3517	Dry	N/A	N/A
Building 421	B-3699	Dry	N/A	N/A
Building 431	B-3433	Dry	N/A	N/A
Building 522	B-3436	Dry	N/A	N/A
Building 612	B-4514	Dry	N/A	N/A
Building 633	83A040026	Liquid	4-07-93	<1 ppm
Building 633	83A040027	Liquid	4-07-93	<1 ppm
Building 633	83A040028	Liquid	4-07-93	<1 ppm
Building 223	X290040	R-Temp	4-19-93	<1 ppm
Berth B-1	X290039	Liquid	4-18-93	<1 ppm
N.M. PKL	X290048	R-Temp	4-18-93	<1 ppm

Source: US Navy 1996h

Table L-14
Summary of FISCO Radiological Materials Handling

Lease Area	Parcel	Records Indicate Storage	Interviews or V/P Inspection Suggests Staging or Other Interim Use	RCS Status
1	444	X		Building demolished. RASO has determined that no follow-up radiological survey work is warranted at the site.
1	742	х		RCS completed, no evidence of release identified.
2	841	Х		US NRC released the area for unrestricted use based on the results of a confirmatory survey. RASO has determined that an additional RCS is not necessary.
3	733	х		RCS completed, no evidence of release identified.
3	831	х		RCS pending removal of radiological materials.
4	113	X		RCS underway.
4	331		х	No RCS planned, no storage areas have been identified.
4	332	X	X	RCS underway.
4	333	·	х	No RCS planned, no storage areas have been identified.
4	341		Х	No RCS planned, no storage areas have been identified.

Table L-14 (continued)
Summary of FISCO Radiological Materials Handling

Lease Area	Parcel	Records Indicate Storage	Interviews or V/P Inspection Suggests Staging or Other Interim Use	RCS Status
4	421	x		RCS underway.
4	433		х	No RCS planned, no storage areas have been identified.
4	521		х	No RCS planned, no storage areas have been identified.
5	211	Х		RCS underway.
5	212	Х		RCS underway.
5	310	Х		RCS underway.
5	312	X	·	RCS underway.
5	313	X		RCS underway.
5	412	X		RCS underway.

Source: US Navy 1996i

Table L-15 FISCO Ordnance Summary

Lease Area	Parcel	Ordnance Material or Operations
2	742	Special weapons shop operations.
4	113	Small arms ammunition storage, indoor firing range.
4	332	Staging of ordnance for shipment.
5	212	Demobilized bombs and missile casings.
5	310	Ammunition and explosives storage.
5	412	Ammunition storage magazine.

Source: US Navy 1996i

Table L-16
Oakland Army Base PCB/Transformers

BRAC Parcel	Building	Transformers	Serial Number	Comments (PCB Sampling Data)
1	MH 18	2	87-512698	Sampling data not available
	14111 10	-	N5088	Sampling data not available
2	161	1	87-51269B	Removed 1988
3	H3	1	8639	
	PP6002	3	· 6037	Sampling data not available
	141	2	87-105-02	Sampling data not available
	148		86-50907-B	Sampling data not available
4	110		80-30707-B	Sampling data not available
5	PP3406	1	*	None present
6	905	1		Sampling data not available
7	703	1	87-51159	Sampling data not available
				None present
8				None present
9	1	2	90527-1	Sampling data not available
			W208092	Sampling data not available
	6	1	8600791-1	Sampling data not available
10	PP2700	3	GE718605566K	1.1 ppm
		· ·	GE718606566K	1.3 ppm
			GE719683566K	7.5 ppm
11	808	3	*	12 ppm
	812	2	6902416	13 ppm
			6902382	18 ppm
12	806	3	*	17 ppm
				22 ppm
				15 ppm
13	PP3814	3	*	12 ppm
	PP2104	3	*	13 ppm
			6485279	18 ppm
14				None present
15	PP1116	1	*	34 ppm
16	PP1002	1	6895231	Sampling data not available
	PP4001	1	*	<u> </u>
17	PP1011	3	7092857	570 ppm
			7092859	840 ppm
			7092861	810 ppm
18	762	4	68A8719	35 ppm
			69AL15915	<1 ppm
			88A063738	3 ppm
			69AJ1209	<1 ppm
19	PP1003	1	84-5-21	12 ppm
	780	3	90A213663	Sampling data not available for
			90A220722	remaining equipment in Study Area
			90A220723	equipment in study Area
	<i>7</i> 93	1	88-1-29616	

Table L-16 (continued)
Oakland Army Base PCB/Transformers

20	740	1	81J0419202	Sampling data not available
21	PP5105	2	*, 12814352	2.5 ppm
	PP5202	1	*	13 ppm
22	PP5613	1	G575341-65K	28 ppm
	660	1	H317921-70-P	Sampling data not available
23	640	1	73296	66 ppm Scheduled for removal
	640	2	73296	<1 ppm
	(New Installs)			
			87-51269A	<1 ppm
24	PP5202	1	*	7.9 ppm
	647	1	6897774	250 ppm
	PP5302			1
25	590	2	756772	110 ppm
			X63210	Dry
26	None Present			

^{*} Serial number is unreadable for data source.

Note: Some data gaps in the PCB inventory and past removal, retrofill, and remediation response actions are anticipated for Oakland Army Base

Table L-17 Oakland Army Base Asbestos

BRAC ParcelFacility NumberSquare FeetYear ConstructedAsbestos Containing Ma Information216179,1521942P7 Transit Shed - vinyl floor tiles in r on first floor, woven paper/tape on d northwest offices79161,2181942AIS Office - vinyl floor tiles throughed RR Engine Ship - cementitious siding walls was not sampled but assumed to asbestos91161,9831942Office Headquarters - vinyl floor tiles building, pipe covering behind walls, wall plaster. Cementitious exhaust pipes	northwest offices duct system over out building on exterior o contain
2 161 79,152 1942 P7 Transit Shed - vinyl floor tiles in r on first floor, woven paper/tape on d northwest offices 7 916 1,218 1942 AIS Office - vinyl floor tiles throughe 8 991 3,476 1942 RR Engine Ship - cementitious siding walls was not sampled but assumed to asbestos 9 1 161,983 1942 Office Headquarters - vinyl floor tiles building, pipe covering behind walls,	out building on exterior o contain
on first floor, woven paper/tape on de northwest offices 7 916 1,218 1942 AIS Office - vinyl floor tiles througher 8 991 3,476 1942 RR Engine Ship - cementitious siding walls was not sampled but assumed to asbestos 9 1 161,983 1942 Office Headquarters - vinyl floor tiles building, pipe covering behind walls,	out building on exterior o contain
northwest offices 7 916 1,218 1942 AIS Office - vinyl floor tiles throughe 8 991 3,476 1942 RR Engine Ship - cementitious siding walls was not sampled but assumed to asbestos 9 1 161,983 1942 Office Headquarters - vinyl floor tiles building, pipe covering behind walls,	out building on exterior contain sthroughout
8 991 3,476 1942 RR Engine Ship - cementitious siding walls was not sampled but assumed to asbestos 9 1 161,983 1942 Office Headquarters - vinyl floor tiles building, pipe covering behind walls,	on exterior o contain s throughout
8 991 3,476 1942 RR Engine Ship - cementitious siding walls was not sampled but assumed to asbestos 9 1 161,983 1942 Office Headquarters - vinyl floor tiles building, pipe covering behind walls,	on exterior o contain s throughout
walls was not sampled but assumed to asbestos 9 1 161,983 1942 Office Headquarters - vinyl floor tiles building, pipe covering behind walls,	o contain s throughout
9 1 161,983 1942 Office Headquarters - vinyl floor tiles building, pipe covering behind walls,	
building, pipe covering behind walls,	
	1_1_1 1
closet on first floor of Wing 2 not san	npled, but
9 4 4,600 1942 POV - vinyl 9" x 9" floor tiles through	1 1
, and the time the time the time time time time time time time tim	hout building
20,120 Communication/HD1 - VIIIy1 / X /	floor tiles
throughout building, acoustical tiles i	n Room 7A,
pipe covering above ceiling in mechan 10 60 13,256 1942 Cafeteria - vinyl flooring throughout	iical room
	building, pipe
covering and mudded joint packages of water lines	on attic not
10 70 6,715 1952 Military Police - vinyl 9" x 9" and 1' x	r1'floor tiles
throughout building	ci noor thes
10 85 9,597 1941 Print Plant - vinyl floor tiles through	out building
10 88 11,134 1919 Storage/Forms - vinyl floor tiles, raw	ashestos
material, pipe covering, linoleum	
10 90 10,556 1941 AV Safety Mort vinyl 9" x 9" floor	tiles throughout
building, linoleum at entrance to proj	ector room
10 99 29,624 1918 AAFES Warehouse - vinyl floor tiles	throughout
building	
11 808 235,040 1942 Warehouse 808 - vinyl floor tiles in th	ne office are on
the mezzanine	
11 812 18,345 1944 Vehicle Maintenance Shop - mudded j	joint packings
and woven paper/tape on breaching is	
room, mudded joint packings along n	
between offices, pipe coverings in ups	tairs storeroom,
vinyl floor tiles in offices and locker r	
Cementitious siding in room off main	
east end of ship and along perimeter v cementitious pipe at west end of build	
sampled but assumed to contain asbes	
11 821 20,000 1943 Storage - roofing material. Cementition	
heaters in east half of building were no	ot sampled but
assumed too contain asbestos	or sampled but

Table L-17 (continued) Oakland Army Base Asbestos

11	1 000	20,000	.1042	D
11	823	20,000	1942	Box and Crate Shop - nonfriable materials assumed
				asbestos containing were cementitious siding and
				piping on west side of men's restroom
12	806	233,640	1942	MOTBA Warehouse 806 - vinyl floor tiles at north
				side of offices at east end of building
12	807	233,640	1942	MOTBA Warehouse 807 - vinyl floor tiles in north
l	ļ			side offices. Cementitious pipe off all space heaters
				and throughout two east wings of building were not
				sampled but assumed to contain asbestos.
13	804	233,640	1941	Warehouse 804 - vinyl floor tiles in mortuary office.
1				Non-friable asbestos includes cementitious panels
				behind east office gas heater, cementitious pipe in
				northwest corner, and fire doors throughout building
13	805	233,640	1942	Warehouse 805 - vinyl floor tiles in office along west
				wall, northwest corner women's restroom.
		l .		Cementitious piping along north and west sides were
				not sampled but assumed to contain asbestos
14	802	233,640	1941	Warehouse 802 - vinyl floor tiles in women's
				restroom, southwest corner of Bay 5, northwest
				corner of office, and employees break room.
				Cementitious piping in officer and fire doors were
				not sampled but assumed to contain asbestos
14	803	233,640	1941	AAFES Warehouse - vinyl floor tiles in women's
	1	1 1		restroom, southwest corner of Bay 5, northwest
		}		corner of office, and employee break room.
		1		Cementitious piping in offices and fire doors were
				not sampled but assumed to contain asbestos.
16	830	2,401	1957	Autocraft Shop- pipe covering and mudded joint
				packings on domestic water and exhaust lines along
				north wall
16	833	6,052	1942	AFGE Union Hall - vinyl floor tiles on main level.
Ī				Cementitious siding on exterior of building was not
		1		sampled but assumed to contain asbestos
16	834	1,209	1981	Motor Pool Dispatch - vinyl floor tiles throughout
				building
17	840	4,912	1951	Paint Shop - Cemetitious piping in paint shop and
				cementitious siding around restroom were not
				sampled but assumed to contain asbestos
18	762	13,638	1965	Dispensary - vinyl floor tiles throughout the building
19	780	39,818	1955	Barracks - vinyl floor tiles throughout the building
19	796	45,951	1951	PWC Building - boiler/tank insulation, pipe covering
			-	with associated mudded joint packings, wrapped
				cardboard/paper pipe covering and associated
				mudded joint packings, vinyl floor tiles in first floor
				janitor's room, Room 305, and annex
<u> </u>	<u> </u>	<u> </u>		,

Table L-17 (continued)
Oakland Army Base Asbestos

20	701	3,796	1942	Chapel - acoustical/thermal insulation on first,
				second, and third pillars along south wall
20	726	14,175	1957	Community Center Library - vinyl tiles throughout
•				building, pipe covering and associated mudded joint
				packings
20	738	7,225	1967	Craft Shop - vinyl floor tiles, hard wall plaster,
				acoustical tile, wrapped cardboard/paper pipe
				covering, mudded joint packings
20	740	12,053	1968	Bowling Center - vinyl floor tiles in spectator seating
		1		area, between lanes, in the office, and in the
				concession area
22	650	35,044	1966	Guest House Hotel - vinyl floor tiles throughout the
				building, mudded joint packings associated with
				nonsuspect pipe covering on water lines
22	660	10,508	1971	Theater - vinyl floor tiles throughout the building,
		1		mudded joint packings associated with pipe coverings
#				in mechanical room, breaching insulation in
				mechanical room
23	640	332,844	1945	AAFES Warehouse - vinyl floor tiles throughout
	i			building, pipe covering and mudded joint packings,
				corrugated pipe covering on water lines of women's
				restroom of executive office
23	641	17,772	1942	Package Store, etc vinyl floor tiles at south and
ļ				west ends of building
24	645	2,778	1942	Officers Family Housing - vinyl floor tiles in
		ļ		southeast end of break room
24	646	15,000	1942	Storage Family Housing - 1' x 1' and 9" x 9" vinyl
				floor tiles in abandoned offices at southwest corner
24	647	8,800	1942	Child Development and Chapel Annex - vinyl floor
	100			tiles throughout the building
24	690	12,586	1956	BEQ HQ Detach - vinyl floor tiles throughout
				building, wrapped cardboard/paper pipe covering
				and associated mudded joint packings on steam lines
25				in first floor bathroom
25	590	363,543	1944	AAFES Warehouse - vinyl floor tiles throughout
				parts of the building, pipe coverings and associated
				mudded joint packings on steam system outside
				boiler room, mudded joint packings associated with
				dairy cooler supply lines, tank insulation and mudded
L				joint packings on abandoned hot water system

Table L-18
Oakland Army Base Oil/Water Separators

Oil/Water Separators	Location	Current Status of Use
OWS 1	Building 991, Railroad Roundhouse	Out of service
OWS 2	Building 812	Service 1302nd heavy duty vehicles
OWS 3	North side of POV lot	Clean POVs moved by the 1302nd
OWS 4	Building 99	Service AAFES vehicles
OWS 5	Building 828	Out of service
OWS 6	Building 832	Service garrison vehicles
OWS 7	Building 830	Service garrison POVs
OWS 8	Building 843	Out of service
OWS 9	Building 843	Out of service

Table L-19
Oakland Army Base Aboveground Storage Tanks

BRAC Parcel	Location (Building)	Year Installed	Capacity (gallons)	Tank Material	Substance Stored	Use/Status
4	SW corner of POV loading dock	Not known	550	Not known	Unleaded gas	Active
8	NW of Building 991	Not known	10,000	Steel	Diesel	Active; replaces old UST
10	Building 99	Not known	Not known	Not known	Waste oil	Removed
16	North of Building 830	Not known	550	Not known	Waste oil	Active
16	West of Building 844	1994	10,000	Steel	Diesel	Active; replaces old UST
19	East of Building 780	Not known	550	Not known	Diesel	Active

Table L-20 Oakland Army Base Underground Storage Tanks

	T		<u>, , , , , , , , , , , , , , , , , , , </u>				Γ				-				 -	T								
Future Actions ¹		1		1			1		7				7			2				2		7		
Regulatory Status		Removed	1990	Removed	1990		Removed	1990	Removed	1990			Removed	1990		Removed	1994			Removed	1990	Removed	1990	
Use/Status		Fueled Building 1	backup generator. Replaced by new Tank 1.	Fueled Building 6	backup generator.	Replaced by new Tank 2.	Fuel source for	Building 161 (Wharf 7)	Fuel source for	base motor pool.	Replaced by new	tank 3.	Fuel source for	base motor pool.	Replaced by new	Fuel source for	base locomotive.	Replaced by new	tank 5.	Serviced Building	812 wash rack.	Serviced Building	812 wash rack.	Replaced by new Tank 6.
Substance Stored	ge Tanks	Fuel oil		Diesel			Fuel oil		Gasoline				Gasoline			Diesel				Waste oil		Waste oil		
Tank Material	Original Underground Storage Tanks	Bare steel	,	Bare steel			Bare steel		Bare steel				Bare steel			Not	known			Bare steel		Bare steel		
Capacity (gallons)	inal Underg	1,000		250			250		10,000				10,000			10,000	,			550		550		
Year Installed	Orig	1942		1966			1942		1957				1957			1982				Not	known	1981		
Location (Building)	//8	Building 1		Between Buildings	1 and 6		North of Building	161	East of Building 833				East of Building 833			Northwest of	Building 991	•		Northeast of	Building 812	Northeast of	Building 812	
BRAC Parcel	·	6		6			2		16				16			8				11		11		:
Tank		Tank 1	(plo)	Tank 2	(plo)	:	Tank 3	(old)	Tank 4	(old)			Tank 5	(old)		Tank 6	(old)			Tank 7	(old)	Tank 8	(old)	

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

3	3	4	4	4	-	2	1	1	1
Removed 1994	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1990	Removed 1992
Fuel source for base motor pool.	Fuel source for base motor pool. Replaced by new Tank 7.	Used Building 828 gas station. Replaced by new Tank 8.	Used Building 828 gas station. Replaced by new Tank 9.	Used Building 828 gas station. Replaced by new Tank 10.	Used Building 828 gas station. Replaced by new Tank 11.	Building 590 fuel source	Building 780 fuel source	Building 793 fuel source	Used at Building 830 Auto Craft Shop
Gasoline	Diesel	Gasoline	Gasoline	Gasoline	Waste oil	Fuel oil	Fuel oil	Fuel oil	Waste oil
Fiberglass	Not known	Bare steel	Bare steel	Bare steel	Bare steel	Bare steel	Bare steel	Bare steel	Not known
2,000	10,000	5,000	5,000	2,000	550	12,500	900,9	8,000	200
1981	1981	1969	1969	1969	1969	1944	1955	1954	1957
Near Building 807	West of Building 844	West of Building 828	West of Building 828	West of Building 828	South of Building 828	South of Building 590	South of Building 780	East of Building 793	Southeast of Building 830
12	16	16	16	16	16	25	19	19	16
Tank 9 (old)	Tank 10 (old)	Tank 11 (old)	Tank 12 (old)	Tank 13 (old)	Tank 14 (old)	Tank 15 (old)	Tank 16 (old)	Tank 17 (old)	Tank 18 (old)

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

				2		7	2		5		9		5				9		9		9	
Active	Active	Active		Removed	1770	Kemoved 1990	Removed	1990	Removed	1990	Removed		Removed	1990			Removed		Removed		Removed	
Collected waste liquid from Building 5 floor drain. Renumbered to Tank 12.	Renumbered to Tank 13.	Renumbered to Tank 14.		Served Building	11. 11.	Served Building 99.	Served Building	99,	Served Buildings	726 and 738.	Served Buildings	780 and 772.	Served Building	701 (Chapel).			Served Building	726.	Served Building	734.	Served Building	737.
Waste liquid	Diesel	Waste oil	ge Tanks	Fuel oil	:	Gasoline	Gasoline		Fuel oil		Not	known	Not	known;	fuel oil	suspected	Not	known	Not	known	Not	known
Fiberglass	Fiberglass	Fiberglass	ground Stora	Bare steel	-	bare steel	Bare steel		Bare steel		Not	known	Not	known;	fuel oil	suspected	Not	known	Not	known	Not	known
200	2,000	550	Removed Underground Storage Tanks	1,000	,	1,000	1,000		1,000		1,000		200				200		1,000		1,000	
1982	1986	1986	Rem	Not	WILL WILL	Not known	Not	known	Not .	known	Not	known	Not	known			Not	known	Not	known	Not	known
North of Building 5	Northeast of Building 6	North of Building 14		Northwest of	00 -::F1::-Q J- :/A	west of building 99	West of Building 99	•	Northeast of	Building 726	Near Buildings 780	and 772	North of Building	701			Building 726		Building 734		Building 737	-
6 :	6	4		11	ç	OI	10		20		19		20				20		20 (?)		21	
Tank 19 (old)	Tank 20 (old)	Tank 21 (old)		Tank A	Tonl. D	l ank d (old)	Tank C	(plo)	Tank D	(pio)	Tank E	(plo)	Tank F	(old)			Tank G	(plo)	Tank H	(old)	Tank I	(old)

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

9		9		9		2			5	-			5				2				7-3						
Removed		Removed		Removed		Removed	1990	Removed	Removed	1994			Removed	1994			Removed		Active					Active			
Served Building	660 (Theater).	Served Building	645.	Served Building	.069	Served Building	805.	Served Building 835.	Served Buildings	991. Decommis-	sioned and filled	with sand in 1982.	Served Buildings	991. Decommis-	sioned and filled	with sand in 1982.	Served Building		Fuel source for	Building 1 backup	generator.	Replaced by old	Tank 1.	Fuel source for	Building 6 backup	generator.	Replaced by old Tank 2.
Not	known	Not	known	Not	known	Gasoline		Waste oil	Diesel				Diesel				Gasoline	New (Permitted) Underground Storage Tanks	Diesel					Diesel			
Not	known	Not	known	Not	known	Bare steel		Not known									Bare steel	derground S	Fiberglass	1				Fiberglass			
Not	. known	200		2,500		1,000		500	7,500	•			2,000				1,000	rmitted) Un	1,000					550			
Not	known	Not	known	Not	known	1968		1957	1956				1956				1956	New (Pe	1990					1990			
Building 66		Building 645		Building 690		East of Building 805		Building 835	Near Building 991	•			Near Building 991				West of Building 99		Building 1					Between Buildings	1 and 6		
22		24		24		13		16	8				8				10		6					6			
Tank J	(old)	Tank K	(old)	Tank L	(old)	Tank M	(old)	Tank N (old)	Tank O	(old)	,		Tank P	(old)			Tank Q (old)		Tank 1					Tank 2			

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

		E	7.	က	Not known	Not known	7
Active	Active	Removed 1994	Active	Removed 1994	Active	Active	Active
Fuel source for Building 834 motor pool. Replaced by old Tank 4.	Fuel source for Building 834 motor pool. Replaced by old Tank 5.	Served Building 991. In 1990, replaced old Tank 6. In 1994 replaced with an AST.	Serves Building 812. Replaced old Tank 8. Scheduled for removal.	Served AAFES. In 1990, replaced old Tank 10. In 1994, replaced with an AST.	Serves Building 828. Replaced old Tank 11.	Serves Building 828. Replaced old Tank 12.	Serves Building 828. Replaced old Tank 13.
Unleaded gasoline	Unleaded gasoline	Diesel	Waste oil	Diesel	Unleaded gasoline	Unleaded gasoline	Unleaded gasoline
Fiberglass	Fiberglass	Not known	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass
10,000	10,000	10,000	550	10,000	6,000	000'9	6,000
1990	1990	1982	1990	1986	1990	1990	1990
East of Building 832	East of Building 832	Northwest of Building 991	Southwest of Building 812	In motor pool area near Building 844	West of Building 828	West of Building 828	West of Building 828
16	16	∞	11	16	16	16	16
Tank 3	Tank 4	Tank 5	Tank 6	Tank 7	Tank 8	Tank 9	Tank 10

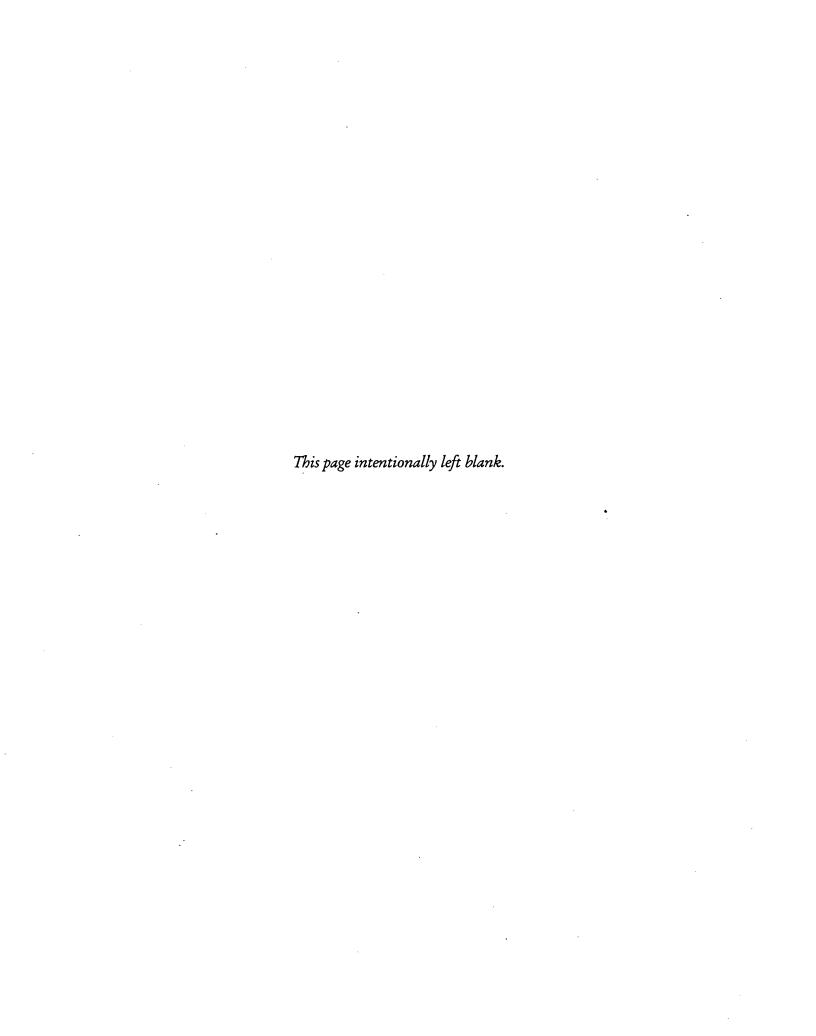
Oakland Army Base Underground Storage Tanks Table L-20 (continued)

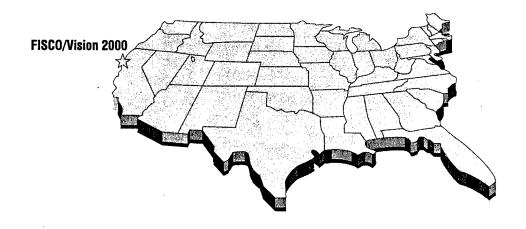
·			20. 17.135
7	7	7	7
Active	Inactive	Active	Active
Waste oil Replaced old Tank Active	Received liquid waste from Building 5 floor drain. Not in use. Renumbered from Tank 19.	Fuel source for Building 5 backup generator. Renumbered from Tank 20.	Serves Building 4 wash rack. Renumbered from Tank 21.
	Waste liquid	Diesel	Waste oil
550 Fiberglass	Fiberglass	Fiberglass	Fiberglass
250	500	2,000	200
1990	1982	1986	9861
East of Building 828	Northwest of Building 5	Northeast of Building 6	North of Building 14
16	6	6	4
Tank 11	Tank 12*	Tank 13	Tank 14

^{*} Identified as Number 12 in UST Monitoring Plan, Number 13 on UST permit.

Future Actions:

- 1 = Petitioned for closure
- 2 = Baseline risk assessment
 - 3 = Status unclear
- 4 = Groundwater monitoring and closure5 = Additional investigation
- 6 = Initial site characterization 7 = Removal





APPENDIX M MITIGATION MONITORING PROGRAM

INTRODUCTION	M-1
MITIGATION MONITORING PROGRAM CHECKLIST	M-2
IMPLEMENTATION	M-2
ATTACHMENT 1: MITIGATION MEASURES	M-4
ATTACHMENT 2: VERIFICATION REPORT	M-9
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Appendix M Mitigation Monitoring Program

M.1. INTRODUCTION

Assembly Bill 3180 became law in California on January 1, 1989. This bill requires all public agencies to adopt monitoring or reporting programs when they approve projects subject to environmental impact reports or negative declarations that identify significant impacts. The reporting or monitoring program must be adopted when a public agency makes its findings under the California Environmental Quality Act (CEQA) so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance during project implementation to mitigate or avoid significant environmental effects.

M.1.1. Purpose

This Mitigation Monitoring Program is designed to serve as a tool for the evaluation of project compliance with mitigation measures identified in the joint environmental impact statement/environmental impact report (EIS/EIR) for the Port of Oakland reuse of FISCO pursuant to its Vision 2000 Program. As required by CEQA Guidelines for the preparation of EIRs, the Port of Oakland will use the Mitigation Monitoring Program to verify inclusion of required project design features and ongoing mitigation measures. The document is not applicable to an EIS, which is the NEPA portion of the environment documentation. The Mitigation Monitoring Program Checklist serves as a summary so that appropriate agencies and the public can easily determine responsibility for implementing measures and the responsible party for verification.

M.1.2. Content

The Mitigation Monitoring Program lists all of the mitigation measures recommended in the Final EIS/EIR for each of the alternatives. The designations for each of the mitigation measures in the checklist are consistent with the Final EIS/EIR. Upon the selection of the alternative to be developed, the Mitigation Monitoring Program will be implemented as part of the project.

M.2. MITIGATION MONITORING PROGRAM CHECKLIST

The Mitigation Monitoring Program Checklist is proposed for monitoring the implementation of the mitigation measures contained in the EIS/EIR. The Port should implement the monitoring program as follows:

- The Port Environmental Department Manager or his designee shall be responsible for coordination of the monitoring program including the monitoring checklist (Attachment 1).
- Each responsible individual or agency shall be accountable for determining whether the mitigation measures contained within the checklist have been complied with. Once all mitigation measures have been complied with, the responsible individual or agency shall submit a Verification Report Form (Attachment 2), or similar form, and a completed checklist to the Port Environmental Department Manager.
- If a responsible individual or agency determines that a noncompliance has occurred, a written notice should be delivered to the Port Environmental Department Manager describing the noncompliance and requiring compliance within a specified period of time. If noncompliance still exists at the expiration of the specified period of time, construction may be halted and fines may be imposed, as appropriate and at the discretion of the Port upon the party responsible for implementation.
- Prior to final sign-off of the building permits, the Director of the Port Engineering Division or his designee shall review the checklist to ensure that all mitigation measures included in the monitoring checklist have been complied with.
- Quarterly, a summary of the status of mitigation measures shall be filed with the Director of the Port Engineering Division.

M.3. IMPLEMENTATION

M.3.1. Management

The Port of Oakland Environmental Department shall be responsible for overall implementation and administration of the Mitigation Monitoring Program Checklist for implementation of the Port of Oakland Vision 2000 Program. As appropriate and applicable, other departments and staff are responsible for monitoring and verification of certain mitigation measures.

If current staffing within the Port Environmental Department cannot absorb the work demand to implement the program, a Compliance Officer shall be hired to manage and coordinate the mitigation monitoring and reporting program. The Compliance Officer would serve under the direction of the Environmental Department Manager.

Duties of the Environmental Department Staff or the Compliance Officer shall include the following:

- Routine inspections and reporting activities.
- Plan checks.
- Coordination of activities of consultants hired by the Port when such expertise and qualifications are necessary.
- Coordination with applicable agencies that have mitigation monitoring and reporting responsibilities.
- Assure follow-up and response to citizens' complaints.
- Develop forms and checklists for reporting. A sample Verification Report Form is included (Attachment 2).
- Develop a work plan and schedule for monitoring activities.
- Maintain the Mitigation Monitoring Checklist or other suitable mitigation compliance summary.
- Coordinate and assure implementation of corrective actions or enforcement measures, as needed.

M.3.2. Funding Mechanism

AB 3180 does not provide a specific funding mechanism for implementation monitoring and reporting programs. However, public agencies have the authority to levy charges, fees or assessments to pay for the program, just as they currently do for the preparation of EIRs and permit documents.

M.3.3. Approval

The initial Mitigation Monitoring Program and later changes will be reviewed and revised by Port Environmental Department staff under the direction of the Department Manager. The initial program, and substantive changes to the program, will then be submitted to the Director of the Engineering Division for review and approval. The Board of Port Commissioners will submit this Mitigation Monitoring Program for approval and adoption as a condition of project approval.

ATTACHMENT 1:

Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Land Use	COAPPET TOTAL	Implementation	Monitoring	Confirmation/Comment
Create the public access component of the Vision 2000 Program to mitigate the loss of Middle Harbor Park and one section of the San Francisco Bay Trail.	A, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Socioeconomics				
No impacts, no mitigation measures required.	N/A	N/A	N/A	N/A
Public Services			The supplier of the supplier o	A THE PARTY OF THE
Explore methods to allow the Spectrum Medical Care clinic to lease nearby property to mitigate the loss of its current location.	A, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Cultural Resources				
Amend the existing 1994 MOA among the ACHP, SHPO, Port, and Navy to incorporate specific measures developed in consultation with the Oakland Landmarks Preservation Advisory Board proposed to mitigate impacts from the destruction of historic buildings in the Naval Supply Center Oakland Historic District.	A, B, C, D	Responsibility: Port, EFA West, SHPO, ACHP, Oakland Landmarks Preservation Advisory Board Timing: As a component of the Final EIS/EIR	None required	
Coordinate among ACHP, SHPO, and the Southern Pacific Railyard to develop measures to mitigate impacts from the loss of the Southern Pacific West Oakland Shops Historic District. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	∢	Responsibility: Port, SHPO, ACHP, Southern Pacific Timing: As a component of the Vision 2000 Program	None required	
Coordinate among ACHP, SHPO, and the Army Corps of Engineers to develop measures to mitigate impacts from the loss of the north training wall. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, C, D	Responsibility: Port, SHPO, ACHP, USACE Timing: As a component of the Vision 2000 Program	None required	
Create a memorandum of agreement among the ACHP, SHPO, Port, and Army that incorporate specific measures to mitigate impacts from the destruction of historic buildings at the Oakland Army Base.	U	Responsibility: Port, SHPO, ACHP, Army Timing: As a component of the Vision 2000 Program	None required	

ATTACHMENT 1 ($cont^2d$): Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Mitigation Measure	Alternatives	Implementation	Monitoring Confirmation/Comment	/Comment
Visual Resources				
Setback the marine terminals from the northern shore of the Oakland Inner Harbor to mitigate impacts from the visual obstruction of Yerba Buena Island and Mount Tamalpais.	A, C	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Create the public access component of the Vision 2000 Program to mitigate the loss of views from Middle Harbor Park	A, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Biological Resources			The state of the s	
Consult with USFWS and USACE and conduct studies to assess construction and dredging impacts to least tern foraging areas, minimize turbidity in least tern foraging habitats, and create least tern foraging habitats in the marine habitat enhancement area to mitigate potential loss of foraging habitats.	A, C, D	Responsibility: Port, USFWS, USACE Timing: As a component of the Vision 2000 Program	None required	
Create new eelgrass beds in the marine habitat enhancement area to mitigate the loss of eelgrass beds in the Oakland Inner Harbor.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Water Resources				
Expand the stormwater pollution prevention program to include the entire site to mitigate impacts to adjacent waters from polluted runoff.	A, B, C, D	Reponsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Drain all washwater from industrial operations to the sanitary sewer system to mitigate impacts to adjacent waters from polluted runoff.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Require tenants to develop spill response plans to mitigate the potential impacts of spills on water quality.	A, B, C, D	Responsibility: Port, Lessee Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Require tenants to properly train and equip employees to respond to spills that could enter the storm drain system.	A, B, C, D	Responsibility: Port, Lessee Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Require tenants to store all drums indoors or in properly contained areas to mitigate the impact of leaking drums on water quality.	A, B, C, D	Responsibility: Port, Lessee Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	

ATTACHMENT 1 (cont'd): Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Mitigation Measure	Alternatives	Implementation	Monitoring	Confirmation/Comment
Water Resources (cont'd)				
Evaluate the availability of land for grassy swales or other vegetative-type controls to allow stormwater to infiltrate into the ground to mitigate impacts to adjacent waters from polluted runoff.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Use special equipment and evaluate and adopt special precautions and measures to mitigate impacts from releasing contaminated materials into the water column during dredging.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: Throughout the dredging process	
Prioritize material not suited for unconfined aquatic disposal so that construction reuse would be the first priority, followed by landfill disposal, and then confined aquatic disposal to mitigate impacts to water quality from disposal or reuse of contaminated dredged material.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: Throughout the dredging process	
Evaluate and adopt special precautions and measures prior to filling the Oakland Middle Harbor and select and implement the appropriate methods and technologies for filling suitable to site-specific conditions and in accordance with future permit requirements to mitigate impacts to water quality from filling.	A, B, C, D	Reponsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: Throughout the filling process	
Geology and Soils				
Use design features for dikes and fills that reduce the potential for slope or ground failure to mitigate damage to new structures, roads, and utilities from earthquakes. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Design new structures and facilities using the results of geotechnical studies to prevent injuries and loss of life, prevent environmental damage, maintain emergency services, and minimize construction and replacement cost to mitigate impacts from earthquakes. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Design and locate facilities used for storing or handling hazardous materials to minimize impacts from releases during an earthquake. Specific mitigation measures will be identified as part of future, projectlevel environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Incorporate the recommendations of a geotechnical engineer when designing and locating facilities to mitigate impacts to shoreline slopes, foundations, structures, and utilities from liquefaction. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	-

ATTACHMENT 1 ($cont^2d$): Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Geology and Soils (cont'd) Evaluate in geotechnical studies of the site the potential for settlement of fills to mitigate any impacts from settlement. Specific mitigation measures will be identified as part of future, project-level environmental documentation. Maintain original elevations of the filled habitat area despite any settlement to mitigate impacts to habitat changes from settlement. Periodically evaluate the habitat to determine whether settlement changes are adverse, beneficial, or neutral with respect to the long-term objectives of the habitat and take corrective action as needed. Incorporate the recommendations of a geotechnical engineer when designing and locating facilities to mitigate impacts to foundations, structural supports, and horizontal features from differential settlement. Specific mitigation measures will be identified as part of future, projectlevel environmental documentation. Traffic Restripe the east and westbound 3 rd Street approaches to Middle Harbor A, B, C, D Road, converting the combination left/through lanes to left turn only to mitigate impacts to traffic congestion at the intersection of 3 rd Street and Adeline.	, Β, C, D , Β, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program Responsibility: Port Timing: As a component of the Vision 2000 Program Responsibility: Port Timing: As a component of the Vision 2000 Program the Vision 2000 Program	None required Responsibility: Port Timing: As determined by geotechnical engineer None required	
ment of mental t. t. g.term sis, lement. roject- roject- roject- roject- roject- roject- roject-	, Β, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program Responsibility: Port Timing: As a component of the Vision 2000 Program Responsibility: Port Timing: As a component of the Vision 2000 Program	None required Reponsibility: Port Timing: As determined by geotechnical engineer None required	
48-6	, Β, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by geotechnical engineer None required	
nent. ject- arbor nly to	, B, C, D	Reponsibility: Port Timing: As a component of the Vision 2000 Program	None required	
	, B, C, D	Responsibility: City of Oakland Timing: As a component of the Vision 2000 Program	None required	
Air Quality There is no feasible measure to mitigate impacts to air quality from A, B, C, D increased transportation activity.	, B, C, D	N/A	N/A	N/A
Implement dust control measures to mitigate impact to air quality from A, B, C, D dust and PM ₁₀ emissions during construction and demolition activity.	, B, C, D	Reponsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: Throughout construction phase	
No impacts, no mitigation measures required.	N/A	N/A	N/A	N/A
Utilities No impacts, no mitigation measures required.	N/A	N/A	N/A	N/A

Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist ATTACHMENT 1 (cont'd):

Mitigation Measure	Alternatives	Implementation	Monitoring	Confirmation/Comment
Hazardous Materials and Waste				
Investigate and identify the extent of PCB-containing equipment at unsurveyed portions of the project site. Ensure compliance with applicable local, state, and federal regulations regarding the management and proper disposal of any identified PCB-containing equipment or PCB contamination. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Reponsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Investigate and identify the location of USTs and ASTs at unsurveyed portions of the project site. Ensure compliance with applicable local, state, and federal regulations regarding the removal and management of any identified tanks. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Investigate and identify the location of OWSs and waste impoundments at unsurveyed portions of the project site. Ensure compliance with applicable local, state, and federal regulations regarding OWS and waste impoundment management. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Investigate and identify the location of all historic industrial operations and structures at the project site. Ensure compliance with applicable local, state, and federal regulations regarding the management of hazardous materials and waste caused by historic land use. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	

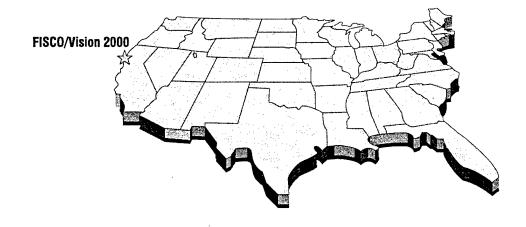
Alternatives:

- Maximum Marine Terminal/ Maximum Rail Terminal Alternative Minimum Marine Terminal/Minimum Rail Terminal Alternative Maximum Marine Terminal/Minimum Rail Terminal Alternative Reduced Harbor Fill Alternative Üüäÿ

ATTACHMENT 2: VERIFICATION REPORT

Date:	Arrival Time: _		Departure Time:	
	mber:		Discipline: ☐ History ☐ Civil Engineering ☐ Environmental Sci	
Condition:				
Compliance:	☐ Acceptable	☐ Unacceptable		Delay Activity Remedial Action Implemented Work Stop Follow-up Conference Required
Activity:				
Observations:				
Recommendations: _				
		•		
		Report App	roval:	
Receipt by Project Sup-	ervisor:	Date:		Time:
Comments/Actions:				
Date Entered to Environ	nmental Monitoring File:			

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APPENDIX N AIR QUALITY MODELING

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Appendix N Air Quality Modeling

N.1. Introduction

Technical discussion of air pollution issues requires an understanding of terms that have a technical meaning. It is especially important to understand the distinction between air pollutant emissions and ambient air quality. The term "pollutant emissions" refers to the amount (usually stated as a weight) of one or more specific compounds introduced into the atmosphere by a source or group of sources.

In practice, most pollutant emissions data are presented as "emission rates": the amount of pollutants emitted during a specified increment of time or during a specified increment of emission source activity. Typical measurement units for emission rates on a time basis include pounds per hour, pounds per day, or tons per year. Typical measurement units for emission rates on a source activity basis include pounds per thousand gallons of fuel burned, pounds per ton of material processed, and grams per vehicle mile of travel.

The term "ambient air quality" refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions. The ambient air quality levels actually measured at a particular location are determined by the interactions among three groups of factors:

- emissions: the types, amounts, and locations of pollutants emitted into the atmosphere;
- meteorology: the physical processes affecting the distribution, dilution, and removal of these pollutants; and
- chemistry: any chemical reactions that transform pollutant emissions into other chemical substances.

Ambient air quality data are generally reported as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million by volume).

Air pollutants are often characterized as being "primary" or "secondary" pollutants. Primary pollutants are those emitted directly into the atmosphere (such as carbon monoxide, sulfur dioxide, lead particulates, and hydrogen sulfide). Secondary pollutants are those (such as ozone, nitrogen dioxide, and sulfate particles) formed through chemical reactions in the atmosphere; these chemical reactions usually involve primary pollutants, normal constituents of the atmosphere, and other secondary pollutants.

Those compounds which react to form secondary pollutants are often referred to as reactive pollutants, pollutant precursors, or precursor emission products. Some air pollutants (such as many organic gases and suspended particulate matter) are a combination of primary and secondary pollutants.

The distinction between primary and secondary pollutants is more than a matter of semantics; important air quality management implications are also involved. The ambient concentration of primary pollutants depends on the spatial concentration of the emission sources, the rate of pollutant emissions, and the degree to which the emitted pollutants are dispersed or removed from the atmosphere between the emission source and the location of interest.

Air quality problems involving primary pollutants (such as carbon monoxide) can usually be traced to a single pollutant source or a concentrated group of sources emitting large quantities of the pollutant. Additionally, the responsible emission source will usually be relatively close to the location of the air quality problem. The distance between the emission source and the location of a ground-level air quality problem depends largely on the height at which the emissions are released into the atmosphere.

When an air quality problem involves a secondary pollutant (such as ozone), the spatial relationship between emission sources and ambient air quality problems becomes much more complicated. Because secondary pollutants are not emitted directly into the atmosphere, observed ambient concentrations may not show a clear correlation with the spatial distribution of sources emitting the pollutant precursors. The time factor involved in the chemical reactions producing secondary pollutants allows emissions from numerous sources to become dispersed and mixed together. As a result, the observed ambient pollutant concentrations are due as much to the cumulative areawide emissions of precursors as to the spatial concentration of emission sources.

Two types of air quality analyses have been used in this EIS/EIR to quantify potential air quality impacts: dispersion modeling analyses to evaluate potential carbon monoxide concentrations, and emissions estimates to evaluate the significance of other pollutant emissions from vehicle traffic, locomotives, and cargo ships. Dispersion modeling and emission estimates for vehicle traffic both depend on the use of vehicle emission rates derived from the EMFAC7F vehicle emission rate model. However, emission rates for use in a dispersion modeling analysis are generated using different assumptions than those used for estimating regional emission quantities.

Emission rates for dispersion modeling analyses represent point estimates of vehicle operating conditions, while those used for ozone precursor evaluations reflect

cumulative patterns of vehicle conditions over an entire trip. The following sections discuss the specific procedures used for the dispersion modeling and ozone precursor analyses.

N.2. Carbon Monoxide Dispersion Modeling Procedures

Predicting the ambient air quality impacts of pollutant emissions requires consideration of the transport, dispersion, chemical transformation, and removal processes which affect pollutant emissions after their release from a source. Gaussian dispersion models are frequently used for such analyses. The term "gaussian dispersion" refers to a general type of mathematical equation used to describe the horizontal and vertical distribution of pollutants downwind from an emission source.

Gaussian dispersion models treat pollutant emissions as being carried downwind in a defined plume, subject to horizontal and vertical mixing with the surrounding atmosphere. The plume spreads horizontally and vertically with a reduction in pollutant concentrations as it travels downwind. Mixing with the surrounding atmosphere is greatest at the edge of the plume, resulting in lower pollutant concentrations outward (horizontally and vertically) from the center of the plume. This decrease in concentration outward from the center of the plume is treated as following a gaussian ("normal") statistical distribution. Horizontal and vertical mixing generally occur at different rates. Because turbulent motions in the atmosphere occur on a variety of spatial and time scales, vertical and horizontal mixing also vary with distance downwind from the emission source.

Dispersion models calculate pollutant concentrations at particular locations ("receptors" in modeling jargon) by applying appropriate horizontal and vertical dispersion factor equations to the initial pollutant concentration. The proper dispersion factor equations are determined from the spatial position of the receptor relative to the emission source location and the centerline of the pollutant plume extending downwind from the emission source.

When more than one emission source affects a particular receptor location, the total pollutant concentration at the receptor is the sum to the individual pollutant increments contributed by each emission source.

The reference to "pollution plumes" implies an analogy to physically mixing fluids (air in this case) with different pollutant concentrations. That would seem to suggest that the pollution concentration at a given location would be the average, not the sum, of the incremental concentrations from each overlapping plume. Despite the use of "pollution plume" terminology, the fluid mixing analogy is inappropriate in the context of atmospheric dispersion models.

The flaw in the fluid mixing analogy involves the total volume of fluid present as additional emission source contributions are added. The volume of "carrier fluid" (air) at a receptor point remains constant regardless of the number of overlapping pollution plumes affecting the site.

The faulty fluid mixing analogy can be visualized as pouring buckets of water with different salt concentrations into an empty swimming pool. The resulting pollutant (salt) concentration is the weighted average of the concentrations in the incremental

additions of salty water. The actual situation with atmospheric dispersion modeling is more like pouring different sized jars of salt into a swimming pool already filled with water. The resulting pollutant (salt) concentration is the sum of the effects of the incremental additions of salt.

In more technical terms, atmospheric dispersion models operate by simulating the spatial distribution of pollutant molecules, rather than simulating the mixing of fluids per se. The pollution plume terminology that leads to confusion is, however, too thoroughly ingrained in the modeling literature to change.

Dispersion modeling analyses for this EIS/EIR used the CALINE4 dispersion model and vehicle emission rates derived from the California Air Resources Board's EMFAC7F vehicle emission rate model.

N.2.1. The CALINE4 Model

CALINE4 (Benson, 1989) is a gaussian dispersion model developed by the California Department of Transportation to evaluate ambient air quality conditions near highways. Modeled highway links are analyzed in the model as a sequence of short segments. Each segment of a highway link is treated as a separate emission source producing a plume of pollutants which disperses downwind. Pollutant concentrations at any specific location are calculated as the total contribution from overlapping pollution plumes originating from the sequence of roadway segments.

The CALINE4 model employs a "mixing cell" approach to estimating pollutant concentrations over the roadway itself. Vertical dispersion of pollutants above the roadway is assumed to be dominated by mechanical turbulence from moving vehicles and convective mixing due to the temperature of vehicle exhaust gases. In this situation, the vertical limit of mixing (i.e., the height of the mixing cell) becomes a function of pollutant residence time within the mixing cell. Residence time depends on mixing cell width, wind angle relative to the mixing cell, and wind speed. The width of the mixing cell over each roadway segment is based on the width of the traffic lanes of the highway plus an additional vehicle-induced turbulence zone on either side. Parking lanes and roadway shoulders are not counted as traffic lanes.

The CALINE4 model computes an initial vertical dispersion parameter to characterize the vertical profile of pollutant concentrations over the roadway. Pollutant concentrations downwind from the mixing cell are then calculated using horizontal and vertical dispersion rates which are a function of various meteorological and ground surface conditions.

When winds are essentially parallel to a highway link, pollution plumes from all roadway segments overlap. This produces high concentrations near the roadway (near the center of the overlapping pollution plumes), and low concentrations well away from the highway (at the edges of the overlapping pollution plumes). When winds are at an angle to the highway link, pollution plumes from distant roadway segments make essentially no contribution to the pollution concentration observed at a receptor location. Under such cross-wind situations, pollutant concentrations near the highway are lower than under parallel wind conditions (fewer overlapping plume contributions), while pollutant concentrations away from the highway may be greater than would occur with parallel winds (near the center of at least some pollution plumes).

The CALINE4 model was originally released in 1984. Minor program revisions were made in 1988 and 1989. One of the program revisions made in 1989 introduced an altitude-based air pressure correction factor into the equation that converts air quality units from micrograms per cubic meter to parts per million by volume. By definition, such unit conversions should be done for 25 degrees Celsius and 1 atmosphere pressure (for proper comparison to federal and state ambient air quality standards). Actual ambient monitoring data must be corrected for temperature and pressure effects of actual ambient temperature and pressure. But the reverse procedure of adjusting modeling results to study area ambient temperature and air pressure should not be used.

The CALINE4 source code used for this EIS/EIR was reprogrammed to ignore study area altitude and air temperature, and to perform the correct unit conversion calculations. The CALINE4 source code was also modified to increase the number of roadway links and receptors that could be modeled in a single run, and to generate a summary table with the total carbon monoxide concentration at each receptor under each meteorological scenario.

All CALINE4 modeling conducted for this EIS/EIR used the model in the standard link run mode. Excess idling emissions at congested intersections were addressed through a simple emission rate adjustment procedure (Sculley 1989). The intersection link option in CALINE4 was not used.

N.2.1.1. Roadway and Traffic Conditions

The highway network modeled for this EIS/EIR included:

- I-80 from the Bay Bridge through the 80/580/880 distribution structure;
- I-580 between I-80 and I-980;
- I-880 from east of I-980 to I-80;
- I-980 from I-880 to I-580;
- Maritime Street;
- 7th Street and the 7th Street extension to Maritime Street;
- Middle Harbor Road;
- West Grand Avenue from Peralta Street to I-80;
- the new frontage road east of I-880, south of West Grand Avenue; and
- short sections of Adeline Street and Union Street at the ramps to I-880.

Roadway coordinates were scaled from available highway maps. Most roadways were modeled as multiple link segments to reflect changes in roadway alignment and traffic volumes. The overall roadway network was modeled as a system of 51 roadway links.

Surface streets were modeled as at-grade roadways. Most of the freeway links were modeled as bridge links, with relative elevations ranging from 5 feet to 60 feet (CH2M Hill 1990). Most mixing zone widths were based on a 5-foot turbulence zone on each side of the roadway, 12-foot lane widths for surface streets, and 15-foot lane widths (to account for center median widths) for the freeways.

Modeled traffic volumes were based on 2010 afternoon peak hour conditions for the No Action Alternative and the Maximum Marine/Maximum Rail, Minimum Marine/Minimum Rail, Maximum Marine/Minimum Rail, and Reduced Fill reuse alternatives. Modeled roadways were treated in a non-directional manner; traffic volumes and speeds in both directions were assigned to a single link. Surface street and freeway volumes were taken from link volume tables generated during traffic modeling studies conducted by Dowling Associates.

Table N-1 summarizes the roadway network used for the CALINE4 modeling analysis.

N.2.1.2. Receptor Locations

Carbon monoxide concentrations were calculated for 26 receptor locations to cover five roadway intersections and six park sites (as part of the 4(f) evaluation). Four receptors were used around each of the five intersections: Maritime Street and Burma Road; Maritime Street and 7th Street Extension; 7th Street and I-880; Adeline Street and 3rd Street; and Adeline Street and I-880. The modeled park site locations included: Port View Park, Middle Harbor Park, Ernie Raimondi Field, Willow Mini Park, Bertha Port Playground, and Chester Street Playground.

Intersection receptor coordinates represent locations 65 feet from the centerlines of the adjacent roadways, except at Maritime Street and Burma Road where a 75-foot distance was used. Receptor coordinates were calculated from roadway link coordinates using a coordinate geometry spreadsheet. All receptor heights were set at five feet.

Table N-2 presents the receptor coordinates used for the CALINE4 modeling.

N.2.1.3. Meteorological and Surface Roughness

All CALINE4 runs assumed a wind speed of 1.0 meters per second (2.2 mph), stable atmospheric conditions (stability class E and a horizontal wind direction fluctuation parameter of 10 degrees), and a mixing height limit of 50 meters (164 feet). Wind directions were varied in 10 degree increments to identify the situation producing the highest total pollutant concentration at each receptor location.

The CALINE4 model was run using an averaging time of 60 minutes and a surface roughness factor of 75 centimeters. No settling or deposition velocities were used. A scale factor of 0.3048 was used to convert link and receptor coordinate units from feet to meters.

N.2.1.4. Background Concentrations

Background pollutant concentrations represent the increment of pollution levels contributed by emission sources that are not included directly in the modeling analysis. The major contributors to background carbon monoxide levels are

unmodeled surface streets and parking lots. A peak hour background concentration of 4 ppm was manually added to the modeling results for each receptor location.

N.2.1.5. 8-Hour Average Carbon Monoxide Concentrations

Potential 8-hour average carbon monoxide levels were estimated by applying a persistence factor of 79% to the maximum 1-hour carbon monoxide levels (modeled increment plus background) for each receptor location. This persistence factor was derived from the ratio of peak 8-hour versus peak 1-hour carbon monoxide concentrations reported from the Alice Street monitoring station in recent years.

N.2.2. Vehicle Emission Rates

The EMFAC7F vehicle emission rate program (California Air Resources Board 1992, 1993, 1993a, 1993b) was used to estimate carbon monoxide emission rates for vehicles operating on roadways in the study area. EMFAC7F determines vehicle emission rates based on a wide range of factors: pollutants of interest; calendar year; air temperature; mix of vehicle types; average route speed; age distribution of vehicles by type; average annual mileage accumulations by vehicle age and type; basic exhaust emission rates for new vehicles by vehicle type and model year; deterioration rates for exhaust emissions by vehicle type and accumulated mileage; and the effectiveness of vehicle inspection and maintenance programs.

EMFAC7F is designed primarily for use in generating regional and statewide emission inventories rather than roadway segment emission rates used for dispersion models. In addition, the model is structured to use default values for most input parameters. Consequently, standardized EMFAC7F output files provided by the California Air Resources Board (CARB) were placed into a spreadsheet model that performs appropriate unit conversions and composite weightings while allowing the user to vary key parameters of interest. Lookup table data in the spreadsheet version of EMFAC7F are based on 5 mph speed increments and 10 degree temperature increments. Key input data and assumptions used for the dispersion modeling analysis are discussed below.

N.2.2.1. Calendar Years

Average vehicle emission rates depend on the types and condition of vehicles operating in the area of concern. State and federal motor vehicle emission control programs are resulting in a continuing reduction in average emission rates for most types of vehicles. Average emission rates will change in the future as vehicles manufactured without sophisticated emission control systems are replaced by newer vehicles with more extensive emission control systems. Air quality analyses involving highway traffic conditions must therefore reflect vehicle emission rates for an appropriate calendar year.

The EMFAC7F program includes emission rates for calendar years from 1980 to 2020. Emission rates used for this analysis were for 2010.

N.2.2.2. Air Temperature

Vehicle emission rates for carbon monoxide vary with ambient air temperature, generally being higher at lower temperatures. Carbon monoxide problems are primarily a winter phenomenon, and tend to occur most often in the late afternoon and evening hours. A typical winter season late afternoon air temperature of 50 degrees Fahrenheit was used for all emission rates.

N.2.2.3. Vehicle Mixes

The EMFAC7F model contains emission rate data for several categories of vehicles, with distinctions based primarily on vehicle weight and fuel type. Different vehicle mixes were used for surface streets and freeways included in the dispersion modeling analysis. The vehicle mixes were generated by a spreadsheet model that adjusts regional vehicle registration data for alternative heavy truck fractions.

Because the modeled surface streets are important truck routes, the surface street vehicle mix was 52.67% autos, 16.71% light trucks/vans, 1.70% medium trucks/vans, 2.56% gasoline-fueled heavy trucks, 25.62% diesel-fueled heavy trucks, and 0.74% motorcycles. The freeway vehicle mix was 64.26% autos, 20.39% light trucks/vans, 2.08% medium trucks/vans, 2.58% gasoline-fueled heavy trucks, 9.79% diesel-fueled heavy trucks, and 0.90% motorcycles. The spreadsheet version of EMFAC7F uses CARB default factors to split the light and medium duty vehicle types into catalyst-equipped, noncatalyst, and diesel-fueled subtypes.

N.2.2.4. Vehicle Operating Modes

The EMFAC7F program recognizes three operating mode conditions for gasoline-fueled passenger vehicles. These operating modes (cold start, hot start, and hot stabilized) are a function of four factors: how long a vehicle's engine has been on; how long the vehicle was parked before the engine was started; the operating mode condition of the vehicle at the time it was previously parked; and whether the vehicle has a catalytic converter. Vehicles operating in a cold start mode have significantly higher emission rates than those operating in hot start or hot stabilized modes.

Vehicle operating mode definitions reflect the conditions of standardized test procedures used to certify that new vehicles meet applicable federal and state emission standards. By definition, the hot stabilized mode represents all vehicle operations occurring after the engine has been on for 505 seconds. The first 505 seconds of vehicle operation will be in either a cold start or a hot start mode. Cold start and hot start operating modes are distinguished by three factors: the operating mode condition of the vehicle when parked; the duration of parking preceding vehicle start-up; and the presence or absence of a catalytic converter.

Vehicles with a catalytic converter will resume operations in a cold start mode after the engine has been off for 1 hour or more. Vehicles without a catalytic converter resume operations in a cold start mode after the engine has been off for 4 hours or more. Any vehicle which is still in a cold start mode when parked will resume operations in a cold start mode regardless of the parking duration.

If a catalyst-equipped vehicle is parked for less than 1 hour, it will resume operations in a hot start mode (unless the vehicle was still in a cold start mode when it parked). If a noncatalyst vehicle is parked for a period of less than 4 hours, it will resume operations in a hot start mode.

Parking duration patterns vary by trip purpose. Work trips often begin in a cold start mode and end with a long parking duration. Shopping trips are more likely to begin in a hot start mode and end with a short or intermediate parking duration. Typical cold start and hot start patterns by trip type have been developed by the

California Department of Transportation (Caltrans) using data from statewide travel pattern surveys (California Department of Transportation 1981).

Vehicle emission rates used in a dispersion modeling analysis should reflect a point estimate of the fraction of vehicles operating in start mode conditions along various roadway segments. This can be calculated by estimating two components of the traffic flow for relevant roadway segments: the mix of trip purposes for the time period being modeled, and the fraction of vehicles that will have been in operation for more than 8.4 minutes (505 seconds). The Caltrans start mode fractions can then be applied to derive cold start and hot start fractions.

A simple spreadsheet model was used perform the operating mode calculations for surface street and freeway traffic. Table N-3 shows the operating mode calculations for surface street traffic, and Table N-4 shows the calculations for freeway traffic. EMFAC7F emission rates were calculated using the weighted average operating mode fractions.

N.2.2.5. Vehicle Speeds

Emission rates used in the dispersion modeling analysis were calculated for various average traffic speed conditions. Afternoon peak hour traffic speeds assumed for the various roadway links are shown in Table N-1. Speeds of 25 or 35 mph were assumed for most freeway segments. Speeds of 10, 15, or 25 mph were assumed for most surface street segments.

N.2.2.6. Excess Idling Emissions

The equations used in the vehicle emission rate models incorporate coefficients representing speed-dependent patterns of vehicle idling, acceleration, cruising, and deceleration. The resulting vehicle emission rates do not represent a constant speed cruise condition. Instead, they represent a pattern of speed changes representing an overall average route speed. The amount of idling time inherent in the emission rate models increases from about 2 percent of travel time at 55 mph to 10 percent at 30 mph and to 48 percent at 5 mph (Smith and Aldrich 1977; Sculley 1989). This inherent pattern adequately accounts for congestion-relatedidling on most roadways that do not experience significant congestion or signalization delays.

The amount of vehicle idling occurring at congested or signalized intersections can exceed the amount of idling inherent in the vehicle emission rate models, even if low intersection approach speeds are assumed. To more adequately account for the amount of idling at congested intersections, special adjustments were made to the basic EMFAC7F emission rates for roadway links at congested intersections.

The basic idle adjustment procedure uses the length of a modeled roadway link and the assumed average vehicle speed to determine the amount of idling time inherent in the associated EMFAC7F emission rate. This idling time value can then be compared to an estimate of expected actual delay time per vehicle (based on intersection delay analyses, level-of-service estimates, or signal cycle times). If the expected actual delay per vehicle exceeds the idling time accounted for in the vehicle emission rates, an excess idling emission rate increment can be calculated and added to the basic EMFAC7F rate.

Traffic modeling studies by Dowling Associates provided an estimate of vehicle delay times for major intersections and freeway ramp areas. Table N-1 shows the delay time per vehicle assumed for each of the modeled roadway links.

The EMFAC7F model does not provide a direct calculation of idling emission rates, but idling rates can be estimated from emission rates at low average speeds. The conventional approach for estimating hot stabilized idling emission rates is to convert a 5-mph, 100% hot stabilized emission rate into a time-based rate (grams of pollutant per minute). Because of the internal structure of the EMFAC7F model, it is also necessary to calculate a cold start correction factor from 100% stabilized mode and 100% cold start mode emission rates at a speed of 16 mph.

Table N-5 shows the idling delay adjustments used for freeway links under the No Action scenario. Table N-6 shows the freeway link idling adjustments used all four of the Vision 2000 plan alternatives (Alternatives A, B, C, and D). Tables M-7 through M-11 summarize the idling delay adjustments used for surface street emission rates under the No Action Alternative and the four Vision 2000 plan alternatives.

N.3. Motor Vehicle Emission Estimates

Ozone and carbon monoxide are the pollutants most strongly correlated with motor vehicle emissions. Carbon monoxide is a direct emission product resulting from fuel combustion. Ozone is not emitted directly to the atmosphere, but is formed from complex chemical reactions in the atmosphere in the presence of sunlight. The directly emitted pollutants which produce ozone through photochemical reactions fall into two groups: reactive organic compounds and nitrogen oxides. Motor vehicle emissions are a major source of both pollutant groups.

Air pollutant emissions associated with vehicle travel under the alternative reuse plans were estimated by combining appropriate vehicle emission rates and travel pattern estimates. Travel pattern estimates were developed to reflect typical trip patterns for average weekday conditions. Traffic studies conducted EIS/EIR were used as the starting point for the trip generation and travel pattern analysis.

Vehicle emission rates were calculated using the EMFAC7F vehicle emission rate model. As noted previously, the approach used to generate appropriate vehicle emission rates for an ozone precursor analysis differs somewhat from the approach used for carbon monoxide dispersion modeling. Because vehicle emission rates are nonlinear functions of speed and operating mode conditions, using single "daily average" values for key parameters can introduce significant errors into the emission estimates. A better approach is to develop distribution patterns that reflect vehicle operating conditions and speeds over an entire day.

Trip generation for each land use category was disaggregated into trip purpose components. Travel time distributions were estimated for each trip purpose category. The travel time distributions provided a mean travel time and a mean vehicle operating mode pattern. The mean travel time was then combined with a speed distribution pattern to compute appropriate weighted average travel distances and emission rates for each trip purpose. The travel distances and emission rates were then combined to produce estimated vehicle emissions for trips associated with each land use category for a particular reuse scenario.

Major steps in the analysis procedure are discussed below. Tabular summaries for most of the major steps are presented at the end of the discussion.

N.3.1. Trip Generation

Trip generation estimates presented in the EIS/EIR were developed separately for auto traffic and truck traffic, based on data provided by Jordan Woodman Dobson (for maritime facilities) and Nolte and Associates (for rail facilities). Vehicle trip estimates for employee traffic are consistent with standard trip rates for light industrial land uses (Institute of Transportation Engineering, 1991). Truck trip estimates were developed primarily from estimates of ship cargo movements and the options for rail versus truck transport of these cargoes.

N.3.2. Travel Patterns

Travel pattern estimates were developed from two components: estimated travel time distributions for various trip types, and estimated vehicle speed distributions for the same trip types. The travel time and vehicle speed distributions represent professional judgment based on regional land use patterns, regional transportation systems, existing employee residency pattern data, previous analyses of travel patterns as represented by various regional traffic models, and previous analyses of data from regional and statewide travel pattern surveys.

Table N-12 presents the trip duration patterns used for the analysis of auto trips. A limited amount of comparison information is available from travel survey data collected by federal, state, and regional agencies. Data from the 1980 census give an average home-work commute trip duration of 26 minutes for the San Francisco/Oakland (US Federal Highway Administration 1985). More recent Caltrans data also show a similar average commute trip duration (25 minutes) for the Bay Area (California Department of Transportation, 1992). The travel time distribution pattern for home-work commute trips has an average travel time (24.75 minutes) close to the Caltrans and Census estimates. Travel time distribution patterns for other trip purposes are based primarily on professional judgment.

Employee residency surveys conducted in 1993 indicate an average commute distance of about 18 miles for Port and FISCO employees (Table N-13). More limited employee travel surveys conducted for the Port of Oakland in 1995 show that more than half of the employees report a commute distance of more than 10 miles, with nearly 8% reporting a commute distance of 30 miles or more.

Truck origin destination pattern data for the Port of Oakland indicate that 71% of the Port-related truck trips begin and end in the San Francisco Bay Area, with the remaining 29% traveling to or from other parts of California or other states (N-14).

The travel distance data in Tables M-13 and M-14 were used to adjust travel time and travel speed pattern assumptions so as to generate realistic travel distance values.

N.3.3. Vehicle Emission Rates

A general discussion of the EMFAC7F vehicle emission rate model was presented in the discussion of carbon monoxide dispersion modeling procedures. The nature of ozone precursor emissions analysis procedures requires that EMFAC7F emission rates be based on:

- daily, rather than peak hour, patterns of vehicle activity;
- land use-generated vehicle trips (by trip purpose categories), rather than total traffic on particular types of roadways; and
- summer temperature patterns, rather than winter patterns.

In addition to computing the proper weighted average emission rates from EMFAC7F output files, the spreadsheet version of EMFAC7F included complete calculations of diurnal and multiday diurnal evaporative emissions. These calculations are normally performed by a separate computer model (BURDEN7F) when CARB prepares emission inventories.

Table N-15 summarizes emission rates for reactive organic compounds and nitrogen oxides. Table N-16 summarizes emission rates for PM₁₀ and carbon monoxide. Key input data and assumptions used for the vehicle emissions analysis are discussed below.

N.3.3.1. Calendar Years

Emission rates used for this analysis represent expected vehicle mixes for 2010.

N.3.3.2. Air Temperature

Exhaust emission rates were calculated for a mean summer day air temperature of 70 degrees Fahrenheit. Winter carbon monoxide exhaust emission rates were also calculated, using an air temperature of 50 degrees Fahrenheit. Evaporative emissions were calculated for a summer day temperature profile that varied from a low of 55 degrees Fahrenheit to a high of 80 degrees Fahrenheit. Intermediate temperatures used for computing diurnal emissions were: 58 degrees at 8 a.m., 61 degrees at 9 a.m., 71 degrees at 11 a.m., and 76 degrees at 1 p.m.

N.3.3.3. Vehicle Mixes

Separate vehicle type mixes were used for port-related auto traffic (mostly employees) and port-related truck traffic. The auto traffic vehicle mix included 73.33% autos, 23.27% light trucks/vans, 2.37% medium trucks/vans, 0% gasoline-fueled heavy duty trucks, 0% diesel-fueled heavy duty trucks, and 1.03% motorcycles. The truck traffic vehicle mix included 5% gasoline-fueled heavy duty trucks and 95% diesel-fueled heavy duty trucks, with no other vehicle types.

N.3.3.4. Vehicle Operating Modes

Table N-12 included the calculation of daily average vehicle operating mode conditions for the trip purpose categories use in the ozone precursor emissions analysis. The operating mode conditions were computed directly from the trip duration patterns assumed for this analysis.

N.3.3.5. Vehicle Speeds

The speed profiles assumed for each trip purpose category are presented the tables that follow. In general, home-work trips were assumed to have a speed profile that produced an average speed of 45 mph. Work-other trips had an speed profile averaging 40 mph. Other trip types had speed profiles averaging about 35 mph.

N.3.4. Emission Calculations for Autos and Trucks

Emission estimates for vehicle traffic under the various alternatives are presented in the following tables. Tables M-12 through M-16 provide data used for all alternatives. Tables M-17 through M-22 provide the analysis for the No Action Alternative. Tables M-23 through M-28 provide the analysis for the Maximum Marine/Maximum Rail Alternative (referred to as Alternative A). Tables M-29 through M-34 provide the analysis for the Minimum Marine/Minimum Rail Alternative (referred to as Alternative B). Tables M-35 through M-40 provide the analysis for the Maximum Marine/Minimum Rail Alternative (referred to as Alternative C). Tables M-41 through M-46 provide the analysis for the Reduced Harbor Fill Alternative (referred to as Alternative D).

The primary emission calculation process was based on estimates of average daily vehicle trip patterns. Annual emission estimates were derived by assuming 250 working days per year.

N.4. Locomotive Emission Estimates

Emission estimates for rail traffic associated with the Port of Oakland have been based on data developed primarily for use in traffic impact analyses.

N.4.1. Train Categories and Sizes

Table N-47 summarizes the characteristics of various trains potentially using rail segments through the Bay Area. Amtrak trains pass through the West Oakland rail yard, and use portions of the rail yard for assembly and maintenance of trains. Local and long-haul freights pass through the West Oakland yard, with some trains originating from the yard. In general, 6,000-foot freights are the longest trains assembled at the West Oakland yard.

N.4.2. Major Rail Routes

The rail traffic data used for this analysis was developed with a focus on northwestern Alameda and western Contra Costa Counties. Rail traffic projections were made for the main rail lines north and south of the West Oakland railyard. These projections, however, did not identify ultimate destinations beyond northern Alameda or western Contra Costa Counties. To fully address emissions from rail operations, it was necessary to extrapolate the rail traffic projections to major rail routes leading out of the Bay Area toward the Sacramento Valley, San Joaquin Valley, and the Monterey Bay/Salinas Valley area. Table N-47 identifies the lengths of various main track segments in the Bay Area.

Rail traffic on the main line north of Oakland was split into Sacramento Valley and San Joaquin Valley components. Freight traffic was evenly split between these two corridors. All long (interstate) Amtrak trains were assigned to the Sacramento Valley corridor. Short (intrastate) Amtrak trains were assigned 60% to the Sacramento Valley and 40% to the San Joaquin Valley corridors.

Rail traffic on the main line south of Oakland was separated into the San Joaquin Valley and South Bay/Salinas corridors. Local freights were split evenly between San Jose area destinations and Monterey/Salinas destinations (Gilroy). All intermodal freights south of Oakland were assigned to the San Joaquin Valley corridor (via Livermore).

Projected 2010 rail traffic estimates (number of trains and gross ton-miles of rail activity) are presented in Tables M-48 (No Action), M-50 (Maximum Marine/Maximum Rail or Alternative A), M-52 (Minimum Marine/Minimum Rail or Alternative B), M-54 (Maximum Marine/Minimum Rail or Alternative C), and M-56 (Reduced Harbor Fill or Alternative D).

N.4.3. Locomotive Emission Rates and Emission Estimates

The number of locomotives used for a train depends on the total gross weight of the train and terrain conditions along the train's route. Emission rates for rail operations can be given in several different format (such as emissions per hour at different throttle settings for individual locomotives, emissions per pound of fuel burned, or emissions per gross ton-mile of train travel). Emission rates given in the EPA emission inventory guidance document (US Environmental Protection Agency, 1992) are standardized on the basis or gross train weight and distance traveled. Emission rates in this ton-mile format account for the use of multiple engines on heavy trains. Table N-47 identifies emission rates applicable to different train types and sizes.

Table N-49 presents annual rail traffic emissions for major rail segments under the No Action Alternative. Table N-51 presents rail traffic emission estimates for the Maximum Marine/Maximum Rail Alternative (Alternative A). Table N-53 presents rail emission estimates for the Minimum Marine/Minimum Rail Alternative (Alternative B). Table N-55 presents rail emission estimates for the Maximum Marine/Minimum Rail Alternative (Alternative C). And Table N-57 presents rail emission estimates for the Reduced Harbor Fill Alternative (Alternative D).

A summary comparison of rail traffic emission for the various alternatives is presented in Table N-58. Also included in Table N-58 is a summary of the net emission increases (compared to the No Action Alternative) for the four reuse plan alternatives.

N.5. Cargo Ship Emission Estimates

The major types of ships using the Port of Oakland include container ships, bulk carriers, and various general cargo ship types. Ship sizes are generally specified either by physical dimensions (length and draft), or by dead weight tons (dwt). Most ships using the Port of Oakland operate with marine diesel engines. A relatively low percentage of cargo ships use steam boilers. While moored at the Port, ships provide their own electrical power and other utilities. Large diesel generators are used for this purpose by most ships. Steam powered ships often switch from heavy bunker fuels to lighter distillate oil fuel for power and utility service while moored.

N.5.1. Ship Call Projections

Table N-59 summarizes the types and sizes of cargo vessels that used the Port of Oakland in 1991 (based on data in California Air Resources Board, 1991). Container ships represented the majority of ship traffic (72%). Bulk carriers represented 17% of the ship traffic, and other cargo vessel types represented 11% of the traffic. Most ships using the Port of Oakland were less than 50 dwt in size.

Average ship sizes are expected to increase in the future, especially for container ships. The sizes of ships that use the Port of Oakland will depend largely on the depth of ship channels serving the Port. Although no specific forecasts of ship sizes

and types have been prepared for the Port of Oakland, the traffic analyses prepared for this EIS/EIR assume that average ship sizes will increase in the future.

Future ship size distributions were estimated by assuming that the percentages of container, bulk carrier, and other cargo vessel traffic will remain the same as at present, but that the size distribution of marine diesel container ships will shift toward larger average sizes. Emission forecasts for 2010 assumed that 10% of diesel container ships would be less than 25 dwt (compared to 28.1% in 1991), 65% would be 25-50 dwt (compared to 58.5% in 1991), 20% would be 50-75 dwt (compared to 10.4% in 1991, and 5% would be 75-100 dwt (compared to 3% in 1991). As noted in Table N-59, most cargo vessels remain moored at the port for 30-36 hours.

N.5.2. Ship Emission Rates and Emission Estimates

Vessel emission rates used for this analysis are summarized in Table N-60. The emission rates come primarily from California Air Resources Board (1991). Emission rates for diesel generators are from US Environmental Protection Agency (1993). Ship transit times and throttle settings for movements into and out of the Port of Oakland are from California Air Resources Board (1991). Potential fuel use rates for various ship types and sizes are presented in Table N-59. Actual average fuel use factors in Table N-60 are from California Air Resources Board (1991) and Port of Long Beach (1986). Each ship visiting the Port of Oakland makes two movements: transit from the ocean to the Port of Oakland, and transit from the Port of Oakland to the ocean.

Table N-61 presents year 2010 emission estimates for the No Action Alternative. Table N-62 presents emission estimates for the Maximum Marine/Maximum Rail Alternative (Alternative A). Table N-63 presents emission estimates for the Minimum Marine/Minimum Rail Alternative (Alternative B). Table N-64 presents emission estimates for the Maximum Marine/Minimum Rail Alternative (Alternative C). Table N-65 presents emission estimates for the Reduced Harbor Fill Alternative (Alternative D). Table N-66 provides a summary comparison of ship emissions for the various alternatives. Also included in Table N-66 is a summary of the net emission increases (compared to the No Action Alternative) for the four reuse plan alternatives.

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TABLE N.1. ROADWAY NETWORK USED FOR CALINE4 DISPERSION MODELING

:		I	SFGMENT	LINK SEGMENT COORDINATES	FS		SFGMENT			PM DEAL	M PEAK HOUR VOLLIMES	وور		DEAV UD	֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	74.7	200	10.07	
					i	HEIGHT ,	LENGTH	:		5		2		FEAT IN	5	DELAT TIME PER VEHICLE (SEC.)	PEK VEHIL	(350)	
ROADWAY	SEGMENT	xı	11	Х2	Y2		(feet)	LANES NO	NO ACTION	ALT A	ALT B	ALT C	ALT D	SPEED	NO ACT	ALT A	ALT B	ALT C	ALT D
08-1	BAY BRIDGE	0	5148	6085	7769	40	6625	91	19150	19208	19223	19262	19250	52	20	20	20	20	20
	BTWN NEW RAMPS	6085	7769	8674	9152	40	2936	9	6647	6633	6672	6618	6629	52	20	20	20	20	20
	N OF 580	8674	9152	7543	10937	æ	2113	∞	17737	17801	17809	17811	17802	52	75	75	75	75	75
I-880	BRDG CONNECTOR	9099	7769	8850	7191	9	2826	4	2250	2334	2348	2331	2332	35	က	ស	S	ĸ	.c
	JNCTN CNCTN 1	8674	9152	9051	8146	9	1074	4	4467	4578	4537	4593	4582	52	30	30	30	30	8
	JINCTIN CINCTIN 2	9051	8146	8820	7191	40	976	4	4467	4578	4537	4593	4582	52	93	30	30	30	8
	DESERT YARD	8820	7191	7719	4953	52	2507	9	5106	5179	9909	2008	5187	32	15	15	15	15	15
	N OF 7TH ST	7719	4953	7593	3897	20	1063	9	5106	5179	2066	2008	5187	32	15	15	15	15	15
	S OF 7TH ST 1	7593	3897	8222	3243	S.	200	9	8869	7295	7134	6889	7284	32	10	10	10	10	10
	S OF 7TH ST 2	8222	3243	9278	3042	0	1075	9	8869	7295	7134	6889	7284	32	10	10	10	10	10
	W OF MANDELA	9278	3042	10057	3344	20	836	9	8869	7295	7134	6889	7284	35	10	01	10	10	10
	W OF UNION	10057	3344	10635	3671	9	664	9	5884	6129	6094	6044	6125	35	10	10	10	10	10
	E OF UNION	10635	3671	11968	3696	9	1333	9	5884	6129	6094	6044	6125	35	10	10	10	10	2
	W OF 980	11968	3696	13099	3470	20	1154	9	5884	6129	6094	6044	6125	35	01	15	15	15	15
	E OF 980	13099	3470	14834	3168	\$	1761	&	13477	13720	13700	13745	13723	52	35	45	45	45	45
I-980	N OF 880 NB 1	13099	3470	12747	3998	40	635	4	7538	7521	7532	7530	75.21	ž	۶	Ş	9	5	5
	N OF 880 SB 1	13099	3470	12672	3746	40	209	4	3864	3854	3860	3828	3854	S2 1	8 8	3 8	8 8	8 8	8 8
	N OF 880 NB 2	12747	3998	13024	5885	40	1608	4	7538	7521	7532	7530	7521	25	30	30	30	30	8
	N OF 880 SB 2	12672	3746	13024	5582	40	1869	4	3864	3854	3860	3828	3854	52	30	30	30	30	30
	S OF BRUSH	13024	5582	13125	6085	9	513	80	11402	11375	11392	11388	11375	52	30	8	30	30	30
	n of Brush	13125	6085	13728	7442	40	1486	80	11402	11375	11392	11388	11375	52	30	30	30	30	30
	S OF 580	13728	7442	13577	9655	40	2218	6 0	11402	11375	11392	11388	11375	52	30	30	30	30	30
SR 24	N OF 580	13577	9655	13451	11063	4	1414	œ	12622	12626	12630	12630	12627	52	8	30	30	30	30

TABLE N-1. ROADWAY NETWORK USED FOR CALINEA DISPERSION MODELING

		LINK	SEGMENT (LINK SEGMENT COORDINATES		l "	SEGMENT			PN PEA	PH PEAK HOUR VOLUMES	ES		PEAK HR	8	DELAY TIME PER VEHICLE (SEC)	PER VEHIC	IE (SEC)	
ROADWAY	SEGMENT	X	Ţ.	χ2	72	(feet)	(feet)		NO ACTION	ALT A	ALT B	ALT C	ALT D	BASE :	NO ACT	ALT A	ALT B	ALT C	ALT D
	. For]	S	923	8		5	:	i ci		j	3	10001	,			,	,	
1-580	E OF JACIN	4/00	2016	0676	3026	⊋ :	,co1	3 9	101/3	50797	66101	10194	COZOT	9 1	٠ ن	đ i	€ :	C :	ਹੈ
	W OF PERALTA	9730	9202	10560	9630	6	933	2 ;	18173	18205	18195	18194	18205	S	.	2	42	42	45
	₩ 0F 980	10560	9630	13577	9655	42	3017	2	18173	18205	18195	18194	18205	52	45	45	42	42	45
	E OF 980	13577	9655	14809	9605	2	1233	c	15427	15427	15429	15427	15427	ĸ	42	42	45	45	45
MARITIME	S OF W GRAND	7543	7593	7291	7166	0	496	4	1535	1515	1615	1577	1512	10	19	19	19	19	19
	S OF BURMA RD	7291	7166	6512	5531	0	1811	4	1280	1318	1347	1386	1319	52	10	10	10	6	6
	S OF 14TH	6512	5531	5883	4199	0	1473	4	1505	1740	1697	1828	1752	52	20	20	22	50	20
	S OF 7TH ST EXT	5883	4199	5632	3696	0	295	4	1137	1372	1329	1460	1384	2	11	14	70	13	14
7TH ST	W OF MDL HARBOR	2891	2640	4023	3017	0	1193	4		1532	955	1006	1579	15	ĸ	16	10	21	17
	E OF MDL HARBOR	4023	3017	4576	3495	0	731	4		1629	1484	1898	1676	52	s	S	2	2	s
	W OF MARITIME	4576	3495	5632	3696	0	1075	4	1403	1738	1649	1815	1787	52	2	ĸ	ស	2	2
	E OF MARITIME	5632	3696	6210	3797	0	287	4	1403	1846	1814	1731	1898	52	2	ß	2	2	2
	7TH ST EXTNSN	5883	4199	6210	3797	0	518	4	407	2375	1062	1469	2454	10	19	14	20	53	15
	W OF 880 + RAMP	6210	3797	7593	3897	0	1387	4	948	1618	1236	1968	1763	52	S	ß	2	2	2
	E OF 880 + RAMP	7593	3897	9056	3897	0	1433	4	1204	1507	1505	1524	1570	15	19	18	18	18	19
MIDDLE	S OF 7TH ST	4023	3017	4727	2263	0	1032	4		929	223	899	069	52	rc	ß	5	ស	S
HARBOR	W OF NEW RD	4727	2263	6613	1961	0	1910	4	913	1003	426	1006	1050	52	2	Ð	ស	2	2
	E OF NEW RD	6613	1961	8951	1634	0	2361	4	1152	625	1236	1968	069	52	S	ស	S	2	2
	EDGE OF RR YARD	8951	1634	10962	2816	0	2333	4	1612	1749	1628	1877	1786	15	19	32	32	46	36
	S OF 3RD	10962	2816	11088	3193	0	398	4	1612	1749	1628	1877	1786	10	88	2	2	35	72
ADEL INE	S OF 880 + RAMP	11088	3193	11088	3696	0	503	4	1321	1374	1338	1414	1382	52	ĸ	ĸ	ĸ	ĸ	ĸ
	N OF 880 + RAMP	11088	3696	11088	4174	0	478	4	1446	1583	1462	1711	1620	10	20	30	21	23	31
																			Ĭ

TABLE N-1. ROADMAY NETWORK USED FOR CALINE4 DISPERSION MODELING

		LINK	SEGMENT	LINK SECMENT COORDINATES			SEGMENT			PM PEA	PM PEAK HOUR VOLUMES	ÆS	_	PEAK HR	<u> </u>	ELAY TIME	DELAY TIME PER VEHICLE (SEC)	LE (SEC)	
ROADWAY	SEGMENT	X1	1,1	X1 Y1 X2 Y2		HEIGHT (feet)	(feet)	 LANES N	LANES NO ACTION ALT A ALT B ALT C ALT D	ALT A	ALT B	ALT C	ALT D	BASE	NO ACT ALTA ALTB ALTC ALTD	ALT A	ALT B	ALT C	ALT D
UNION	N OF 880 + RAMP	10635	3193	10635	3671	0	478	4	1000	1073	096	905	1081	10	92	12	91	2	=
	S OF 880 + RAMP	10635	3671	10635	4174	0	503	4	433	433	433	433	433	52	, v	i s	2 5	, v	, v
FRONTAGE	S OF W GRAND	8950	7141	8222	5733	0	1585	4	1547	1569	1650	1753	1565	52	ĸ	ĸ	ស	c,	S
	S OF 14TH	8222	5733	7819	4928	0	006	4	512	902	717	836	778	52	S	ß	S	S	S
W GRAND	W OF FRONTAGE	7543	7593	8950	7141	0	1478	4	2213	2267	2232	2276	2340	52	S	S	ഹ	ro	ĸ
	E OF FRONTAGE	8950	7141	9931	6864	0	1019	4	1149	1031	1127	1093	1028	10	22	22	22	23	23
																	:		

TABLE N-2. CALINE4 RECEPTOR COORDINATES

RECEPTOR LOCATION	X-COORD	Y-COORD	OFFSET
MARITIME & BURMA, NW	7,262	7,264	75
MARITIME & BURMA, SW	7,192	7,132	75
MARITIME & BURMA, NE	7,396	7,197	75
MARITIME & BURMA, SE	7,326	7,065	75
MARITIME & 7TH ST EXT, NW MARITIME & 7TH ST EXT, SW MARITIME & 7TH ST EXT, NE MARITIME & 7TH ST EXT, SE	5,868	4,320	65
	5,806	4,190	65
	5,959	4,208	65
	5,896	4,080	65
7TH & 880, NW	7,535	3,958	65
7TH & 880, SW	7,567	3,830	65
7TH & 880, NE	7,666	3,962	65
7TH & 880, SE	7,746	3,832	65
ADELINE & 3RD, NW	11,023	3,258	65
ADELINE & 3RD, SW	10,998	3,128	65
ADELINE & 3RD, NE	11,153	3,258	65
ADELINE & 3RD, SE	11,135	3,128	65
ADELINE & 880, NW	11,023	3,743	65
ADELINE & 880, SW	11,023	3,613	65
ADELINE & 880, NE	11,153	3,746	65
ADELINE & 880, SE	11,153	3,616	65
PORT VIEW PARK	2,693	2,323	
MIDDLE HARBOR PARK	8,712	713	
ERNIE RAIMONDI FIELD	9,425	6,890	
WILLOW MINI PARK	9,240	5,729	
BERTHA PORT TOT LOT	8,554	4,330	
CHESTER STREET TOT LOT	9,821	3,515	

Note: Coordinates and roadway offset distances are in feet.

TABLE N-3. OPERATING MODES FOR SURFACE STREET TRAFFIC

TRIP PURPOSE	TRIP PURPOSE MIX	HOT STABLE FRACTION		COLD START FRACTION	HOT START FRACTION
H-W H-S H-O O-W O-O	40.00% 10.00% 20.00% 20.00% 10.00%	50.00% 45.00% 60.00% 50.00% 45.00%		46.25% 28.97% 27.23% 31.20% 15.77%	3.75% 26.03% 12.77% 18.80% 39.23%
CHECKSUM:	100.00%	51.00%	WTD MEAN:	34.66%	14.34%

START MODE = FIRST 505 SECONDS OF VEHICLE TRAVEL STABLE MODE = TRAVEL AFTER 505 SECONDS OF VEHICLE OPERATION

CATALYST FRACTION FOR LDA + LDT + MDT + MC 98.92%

	COLD START	HOT START	
CATALYST	34.76%	14.24%	
NONCATALYST	25.85%	23.15%	

START MODE SPLIT FACTORS:

	CATALYST	VEHICLES	NONCAT V	EHICLES
TRIP	COLD	HOT	COLD	HOT
PURPOSE	STARTS	STARTS	STARTS	STARTS
H-W	92.63%	7.37%	80.04%	19.96%
H-S	52.89%	47.11%	33.61%	66.39%
H-O	68.35%	31.65%	43.38%	56.62%
O-W	62.64%	37.36%	40.73%	59.27%
O-O	28.90%	71.10%	8.25%	91.75%
WTD MEAN:	71.43%	28.57%	53.02%	46.98%

TABLE N-4. OPERATING MODES FOR FREEWAY TRAFFIC

TRIP PURPOSE	TRIP PURPOSE MIX	HOT STABLE FRACTION	=	COLD START FRACTION	HOT START FRACTION
H-W H-S H-O O-W O-O	60.00% 5.00% 10.00% 20.00% 5.00%	90.00% 65.00% 80.00% 80.00% 82.50%		9.25% 18.44% 13.62% 12.48% 5.02%	0.75% 16.56% 6.38% 7.52% 12.48%
CHECKSUM:	100.00%	85.38%	WTD MEAN:	10.58%	4.04%

START MODE = FIRST 505 SECONDS OF VEHICLE TRAVEL STABLE MODE = TRAVEL AFTER 505 SECONDS OF VEHICLE OPERATION

CATALYST FRACTION FOR LDA + LDT + MDT + MC 98.92%

	COLD START	HOT START	
CATALYST	10.61%	4.02%	
NONCATALYST	7.96%	6.67%	

START MODE SPLIT FACTORS:

-				
_	CATALYST	VEHICLES	NONCAT VE	HICLES
TRIP PURPOSE	COLD STARTS	HOT STARTS	COLD STARTS	HOT STARTS
H-W H-S H-O O-W O-O	92.63% 52.89% 68.35% 62.64% 28.90%	7.37% 47.11% 31.65% 37.36% 71.10%	80.04% 33.61% 43.38% 40.73% 8.25%	19.96% 66.39% 56.62% 59.27% 91.75%
WTD MEAN:	79.03%	20.97%	62.60%	37.40%

TABLE N.5. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	80-1	80-2	80-3	880-1	880-2	880-3	880-4	880-5	9-088	880-7	880-8	6-088	880-10	880-11
SPEED (MPH) FOR BASE EMISSION RATE	52	25	22	35	25	22	35	35	35	35	35	35	35	35
LINK LENGTH, FEET	6,625	2,936	2,113	2,826	1,074	926	2,507	1,063	200	1,075	836	999	1,333	1,154
DELAY PER VEHICLE, SECONDS OF IDLE	20	20	75	ស	30	30	15	15	01	10	10	10	10	10
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	2.07	5.07	2.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
* CATALYST VEHICLES	98.92	98.95	98.92	98.92	98.92	98.95	98.95	98.95	98.95	98.92	98.95	98.92	98.95	98.95
* NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
* CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
ОИТРИТ														
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
* IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	6.99	13.65	13.65	6.9	6.9	6.9	6.9	6.99	6.99	6.99	6.9
IDLE SECONDS IN EMFAC/MOBILE RATES	24.66	10.93	7.87	3.85	4.00	3.63	3.41	1.45	1.24	1.46	1.14	0.00	1.82	1.57
REQUIRED EXTRA IDLE SECONDS	25.34	9.07	67.13	1.15	26.00	26.37	11.59	13.55	8.76	8.54	8.86	9.10	8.18	8.43
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	5.98	. 2.98	2.98	2.98	2.98
ADDED IDLE ADJUSTMENT, GM/MI	0.41	0.33	3.43	0.04	2.62	2.92	0.50	1.38	1.04	98.0	1.15	1.48	99.0	0.79
ADJUSTED EMISSION RATE, GM/MI	4.18	4.10	7.20	3.02	6.39	69.9	3.48	4.36	4.02	3.84	4.13	4.46	3.64	3.77
ADJUSTMENT FACTOR, * INCREASE	11.0%	8.9%	91.1%	1.5\$	69.4%	77.5%	16.8%	46.2%	35.1%	28.8%	38.5%	49.7%	22.3	26.5

TABLE N-5. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT FREEMAY TRAFFIC IN 2010

INPUT VARIABLES	880-12	980-1	980-2	980-3	980-4	980-5	9-086	980-7	SR 24	580-1	580-2	580-3	580-4
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	52	25	25	22	25	25	25	25	25	25
LINK LENGTH, FEET	1,761	635	209	1.608	1,869	513	1,486	2,218	1,414	1,057	933	3,017	1,233
DELAY PER VEHICLE, SECONDS OF IDLE	35	30	30	30	30	30	30	30	30	45	45	45	45
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
1 100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
x CATALYST VEHICLES	98.92	98.92	98.92	98.95	98.92	98.95	98.95	98.95	98.95	98.95	98.92	98.95	98.92
% NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
* CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.01	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
ОСТРОТ													
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	95.9	2.36	1.89	5.99	96.9	1.91	5.53	8.26	5.26	3.93	3.47	11.23	4.59
REQUIRED EXTRA IDLE SECONDS	28.44	27.64	28.11	24.01	23.04	28.09	24.47	21.74	24.74	41.07	41.53	33.77	40.41
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
ADDED IDLE ADJUSTMENT, GM/MI	1.75	4.70	5.97	1.61	1.33	5.95	1.78	1.06	1.89	4.20	4.81	1.21	3.54
ADJUSTED EMISSION RATE, GM/MI	5.52	8.47	9.74	5.38	5.10	9.69	5.55	4.83	5.66	7.97	8.58	4.98	7.31
ADJUSTMENT FACTOR, * INCREASE	46.3%	124.8%	158.3%	42.8%	35.4%	157.0%	47.2 x	28.1%	50.2%	111.4%	127.6%	32.1%	94.0%

TABLE N-6. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: VISION 2000 PLAN FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	80-1	80-2	80-3	880-1	880-2	880-3	880-4	880-5	9-088	880-7	880-8	6-088	880-10	880-11
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	35	25	25	35	35	35	35	35	35	35	35
DELAY PER VEHICLE, SECONDS OF IDLE	50	202	75	5.040	30	30	15	15	10	10,073	10	10	1,333	1, 154
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
100% STABILIZED 5 MPH RATE. GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	2.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
* CATALYST VEHICLES	98.95	98.95	98.95	98.92	98.92	98.92	98.95	98.95	98.95	98.95	98.95	98.95	98.95	98.95
* NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
* CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
ООТРИТ														
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	96.0	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
* IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	6.9	13.65	13.65	6.9	6.9	6.9	6.9	6.9	6.99	6.99	6.9
IDLE SECONDS IN EMFAC/MOBILE RATES	24.66	10.93	7.87	3.85	4.00	3.63	3.41	1.45	1.24	1.46	1.14	06.0	1.82	1.57
REQUIRED EXTRA IDLE SECONDS	25.34	9.07	67.13	1.15	26.00	26.37	11.59	13.55	8.76	8.54	8.86	9.10	8.18	13.43
WEIGHTED * COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
ADDED IDLE ADJUSTMENT, GM/MI	0.41	0.33	3.43	0.04	2.62	2.92	0.50	1.38	1.04	98.0	1.15	1.48	99.0	1.26
ADJUSTED EMISSION RATE, GM/MI	4.18	4.10	7.20	3.02	6.39	69.9	3.48	4.36	4.02	3.84	4.13	4.46	3.64	4.24
ADJUSTMENT FACTOR, % INCREASE	11.0%	8.9%	91.1\$	1.5	69.4%	77.5\$	16.8%	46.2%	35.1\$	28.8%	38.5%	49.7%	22.3%	42.2%

TABLE N-6. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: VISION 2000 PLAN FREEWAY TRAFFIC IN 2010

SPEED (HPH) FOR BASE EMISSION RATE 25	INPUT VARIABLES	880-12	980-1	980-2	980-3	980 - 4	980-5	9-086	980-7	SR 24	580-1	580-2	580-3	580-4
1,761 635 509 1,608 1,869 513 1,486 2,218 1,414 1,761 3,77 3	SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	25	25	25	25	25	25	52	25	25	25
IDLE 45 30 30 30 30 30 30 30 30 30 30 30 30 30	LINK LENGTH, FEET	1,761	635	209	1,608	1,869	513	1,486	2,218	1,414	1,057	933	3,017	1,233
3.77 3.77 3.77 3.77 3.77 3.77 3.77 3.7	DELAY PER VEHICLE, SECONDS OF IDLE	45	30	30	30	30	30	30	30	30	45	45	45	45
HAMI 11.72 11.74 17.42	BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
GH/MI 5.07 6.07 6.07 Gh/MI III.42 II.42 ""><td> 100% STABILIZED 5 MPH RATE, GM/MI</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td><td>11.72</td></th<>	100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
GH/MI 17.42 17.62 17.42 <td< td=""><td> 100% STABILIZED 16 MPH RATE. GM/MI</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td><td>5.07</td></td<>	100% STABILIZED 16 MPH RATE. GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 98.92 7.96	100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
7.96 7.96	* CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.95	98.95	98.92	98.92	98.92	98.95	98.92	98.92	98.92
HIN 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98	* NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
HIN 0.98 0.98 0.98 0.98 0.98 0.99 0.99 0.99	* CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
HIN 0.98 0.9	ООТРИТ													
E, GM/MI 40.27 33557 33577 3377 3377 3377 3377 3377 3377 3377 3377 3377 3377 3377 </td <td>HOT STABILIZED IDLE RATE, GM/MIN</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td> <td>0.98</td>	HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ATES 3.3557 3.355	ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
ATES 13.65	COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
RATES 6.56 2.36 1.89 5.99 6.96 1.91 5.53 8.26 5.26 1 38.44 27.64 28.11 24.01 23.04 28.09 24.47 21.74 24.74 1 10.58 10.58 10.58 10.58 10.58 10.58 10.58 10.58 10.58 GM/MIN 1 .2284 1 .2884 1 .2884 2 .	% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
38.44 27.64 28.11 24.01 23.04 28.09 24.47 21.74 24.74 10.58 10.58 10.58 10.58 10.58 10.58 10.58 10.58 1.2284 1.2284 1.2284 1.2284 1.2284 1.2284 1.2284 1.2284 3.77 3.77 3.77 3.77 3.77 3.77 3.77 3.77 3.77 2.36 4.70 5.97 1.61 1.33 5.92 1.76 1.06 1.89 6.13 8.47 9.74 5.38 5.10 9.69 5.55 4.83 5.66 62.64 124.84 158.34 42.84 35.44 157.04 47.24 28.14 50.24	IDLE SECONDS IN EMFAC/MOBILE RATES	95.9	2.36	1.89	5.99	96.9	1.91	5.53	8.26	5.26	3.93	3.47	11.23	4.59
10.58 10.5	REQUIRED EXTRA IDLE SECONDS	38.44	27.64	28.11	24.01	23.04	28.09	24.47	21.74	24.74	41.07	41.53	33.77	40.41
GN/MIN 1.2284	WEIGHTED * COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
3.77 3.77 3.77 3.77 3.77 3.77 3.77 3.7	WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
2.36 4.70 5.97 1.61 1.33 5.92 1.78 1.06 1.89 6.13 8.47 9.74 5.38 5.10 9.69 5.55 4.83 5.66 62.64 124.84 158.34 42.84 35.44 157.04 47.24 28.14 50.24	BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
6.13 8.47 9.74 5.38 5.10 9.69 5.55 4.83 5.66 62.6* 124.8* 158.3* 42.8* 35.4* 157.0* 47.2* 28.1* 50.2*	ADDED IDLE ADJUSTMENT, GM/MI	2.36	4.70	5.97	1.61	1.33	5.95	1.78	1.06	1.89	4.20	4.81	1.21	3.54
62.6% 124.8% 158.3% 42.8% 35.4% 157.0% 47.2% 28.1% 50.2%	ADJUSTED EMISSION RATE, GM/MI	6.13	8.47	9.74	5.38	5.10	69.6	5.55	4.83	9.66	7.97	8.58	4.98	7.31
	ADJUSTMENT FACTOR, % INCREASE	62.6	124.8%	158.3	42.8 x	35.4%	157.0%	47.2%	28.1%	50.2%	111.4%	127.6%	32.1	94.0%

TABLE N-7. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	71H-1	7TH-2	7ТН-3	7ТН-4	7ТН-ЕХТ	7ТН-6	7TH-7 P	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	22	52	10	52	25	25	25	10	25	15	25
LINK LENGTH, FEET	496	1,811	1,473	295	1,193	731	1,075	287	518	1,387	1,433	1,032
DELAY PER VEHICLE, SECONDS OF IDLE	19	10	8	11	ഹ	2	2	ഹ	19	ည	19	ம
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	6.17	6.17	6.17	6.17	12.02	6.17	9.05	6.17
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.95	98.92	98.92	98.95	98.95	98.95	98.95	98.92	98.95	98.95	98.92	98.95
* NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
X CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ОИТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
* IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	13.65	13.65	13.65	13.65	32.99	13.65	25.39	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	4.4	2.72	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	3.26	14.52	0.00	0.56	2.28	1.00	2.81	7.35	0.00	2.46	1.20
WEIGHTED * COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	6.17	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT, GM/MI	2.22	0.56	1.41	0.00	0.07	0.44	0.13	0.68	2.02	0.00	0.24	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.43	7.58	12.02	6.24	6.61	6.30	6.85	14.04	6.17	9.26	6.34
ADJUSTMENT FACTOR, * INCREASE	18.8%	4.2%	22.8%	0.0%	1.1%	7.2%	2.1%	11.1%	16.8%	0.0	2.7%	2.7%

TABLE N.7. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRB	HRBR-3 N	I HRBR-4 M	M HRBR-5 A	ADELIN-1	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	22	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	006	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	ഹ	2	19	88	S	20	16	Ŋ	വ	ស	5	75
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.92	98.95	98.92	98.95	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
* NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
* CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ООТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
* IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	0.00	29.02	3.13	9.25	5.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED * COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.00	10.41	0.89	2.76	1.57	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.05	22.43	7.06	14.78	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	0.0%	86.6\$	14.4%	23.0%	13.0%	14.4%	0.0	4:2%	0.0	0.0
							14-02-4					

TABLE N.8. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE A SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7ТН-1	7ТН-2	71н-3	7TH-4	7ТН-ЕХТ	7ТН-6	7TH-7 M	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	15	25	25	25	10	25	15	25
LINK LENGTH, FEET	496	1,811	1,473	295	1,193	731	1,075	587	518	1.387	1.433	1,032
DELAY PER VEHICLE, SECONDS OF IDLE	19	10	50	14	16	5	S	2	14	ß	18	1 40
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.92	98.95	98.95	98.92	98.95	98.95	98.92	98.92	98.95	98.95	98.92	98.92
* NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
* CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ООТРОТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.75	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	3.26	14.52	1.36	2.23	2.28	1.00	2.81	2.35	0.00	1.46	1.20
WEIGHTED & COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT, GM/MI	2.25	0.26	1.41	0.34	0.27	0.44	0.13	0.68	0.65	0.00	0.15	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.43	7.58	12.36	9.29	6.61	6.30	6.85	12.67	6.17	9.17	6.34
ADJUSTMENT FACTOR, * INCREASE	18.8%	4.2%	22.8	2.9%	3.0%	7.2%	2.1%	11.1%	5.4%	0:0	1.6%	2.7%

TABLE N-8. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE A SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRB	HRBR-3 M	HRBR-4 M	HRBR-5 ADELIN-1	DELIN-1 /	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	203	478	478	203	1,585	900	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	ഹ	ည	35	2	വ	30	17	S	2	ഹ	ഹ	- 22
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.92	98.95	98.92	98.92	98.95	98.92	98.92	98.92	98.92	98.92	98.95	98.92
* NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
* CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ОИТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
* IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	5.08	55.05	3.13	19.25	6.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.31	19.72	0.89	5.74	1.86	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.33	31.74	7.06	17.76	13.88	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	3.4%	164.1%	14.4%	47.8%	15.5%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE N.9. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE B SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7H-1	7H-2	7TH-3	7ТН-4	7ТН-ЕХТ	7ТН-6	7TH-7 M	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	1 103	25	25	25	10	25	15	25
LINK LENGIN, FEE! DELAY PER VEHICLE, SECONDS OF IDLE	19	1,611	22	205 20	1, 193	2	1,0/3) 2	20 20	1,30/	1,433	1,032
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.95	98.92	98.95	98.95	98.92	98.92	98.92	98.92	98.95	98.92	98.95	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
* CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ОИТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
* IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.75	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	3.26	16.52	7.36	0.00	2.28	1.00	2.81	8.35	0.00	1.46	1.20
WEIGHTED * COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT, GM/MI	2.25	0.26	1.60	1.87	0.00	0.44	0.13	0.68	2.30	0.00	0.15	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.43	7.77	13.89	9.05	6.61	6.30	6.85	14.32	6.17	9.17	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8%	4.2%	25.9%	15.5%	0.0%	7.2%	2.1%	11.1	19.1%	0.0	1.6%	2.7%

TABLE N.9. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE B SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRBR-3	I HRBR-3 M	HRBR-4 M	HRBR-5 ADELIN-1		ADELIN.2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	52	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	900	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	2	ည	32	4	2	21	16	5	ъ	5	S	72
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
X CATALYST VEHICLES	98.92	98.95	98.95	98.92	98.95	98.95	98.92	98.92	98.92	98.92	98.95	98.92
X NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
A CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ОИТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
X IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
I IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	25.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	5.08	55.05	3.13	10.25	5.22	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.31	19.72	0.89	3.06	1.57	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.33	31.74	7.06	15.08	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, * INCREASE	0.0 %	0.0	3.4%	164.1%	14.4%	25.4%	13.0%	14.4%	0.0	4.2%	0.0%	0.0%

TABLE N-10. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE C SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7TH-1	7TH-2	7TH-3	7TH-4	7ТН-ЕХТ	7ТН-6	7TH-7 M	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	15	25	25	25	10	25	15	75
LINK LENGTH, FEET	496	1,811	1,473	295	1,193	731	1,075	587	518	1,387	1.433	1 032
DELAY PER VEHICLE, SECONDS OF IDLE	19	თ	20	13	21	2	5	S	83	S	18	
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7 20
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.92	98.95	98.92	98.92	98.95	98.95	98.95	98.92	98.92	98.92	98.92	98.92
A NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
* CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1 33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2,1752	2 1752
* IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.72	4.00	2.19	11.65	5.16	16.54	3.80
KEQUIKED EXIKA IDLE SECONDS	7.84	2.26	14.52	0.36	7.23	2.28	1.00	2.81	17.35	0.00	1.46	1.20
WEIGHTED & COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.05	6.17
ADDED IDLE ADJUSTMENT, GM/MI	2.25	0.18	1.41	0.09	98.0	0.44	0.13	0.68	4.78	0.00	0.15	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.35	7.58	12.11	9.88	6.61	6.30	6.85	16.80	6.17	9.17	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8\$	2.9%	22.8%	0.8%	9.6	7.2%	2.1%	11.1%	39.7	0.0	1.6%	2.7%

TABLE N-10. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE C SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HRB	HRBR-3 M	HRBR-4 M	HRBR-5 /	ADELIN-1 /	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	22	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	900	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	2	വ	46	95	ည	22	16	5	5	5	S	52
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.92	98.95	98.95	98.95	98.95	98.92	98.92	98.92	98.92	98.92	98.95	98.92
* NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
* IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	19.08	83.05	3.13	11.25	5.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	1.17	29.75	0.89	3.36	1.57	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	10.19	41.77	7.06	15.38	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	12.9%	247.5%	14.4%	27.9%	13.0%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE N-11. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE D SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7TH-1	7H-2	7TH-3	7TH-4	7ТН-ЕХТ	714-6	7TH-7 M	HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	15	25	25	25	10	25	15	۲,
LINK LENGTH, FEET	496	1,811	1,473	295	1,193	731	1.075	587	518	1 387	1 433	1 2
DELAY PER VEHICLE, SECONDS OF IDLE	19	6	20	14	17	2			15		5.	1,00 1
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	6	, Y
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15 91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7 29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.92	98.95	98.95	98.92	98.95	98.92	98.95	98.95	98.92	98.92	98.92	98.92
A NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
* CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ООТРОТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1 33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.75	4.00	2.19	11.65	5.16	16.54	3.80
REQUIRED EXTRA IDLE SECONDS	7.84	2.26	14.52	1.36	3.23	2.28	1.00	2.81	3.35	0.00	2.46	1.20
WEIGHTED & COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.05	6.17	6.17	6.17	12.02	6.17	9.02	6.17
ADDED IDLE ADJUSTMENT, GM/MI	2.22	0.18	1.41	0.34	0.39	0.44	0.13	0.68	0.92	0.00	0.24	0.17
ADJUSTED EMISSION RATE, GM/MI	14.27	6.35	7.58	12.36	9.41	6.61	6.30	6.85	12.94	6.17	9.26	6.34
ADJUSTMENT FACTOR, % INCREASE	18.8%	2.9%	22.8%	2.9%	4.3%	7.2%	2.1%	11.1%	7.7%	0.0	2.7%	2.7%

TABLE N-11. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE D SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2 M HR	1 HRBR-3 N	1 HRBR-4 M	HRBR-5 ADELIN-1		ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	900	1,478	1.019
DELAY PER VEHICLE, SECONDS OF IDLE	 2	ည	36	72	2	31	17	υ.	2	2	ഹ	23
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
* CATALYST VEHICLES	98.92	98.92	98.95	98.95	98.92	98.95	98.92	98.92	98.92	98.95	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
* CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
ОИТРИТ												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
* IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	25.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	9.08	63.05	3.13	20.25	6.25	3.13	0.00	1.65	0.00	0.08
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.05	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.55	22.59	0.89	6.04	1.86	0.89	0.00	0.26	0.00	0.01
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.57	34.61	7.06	18.06	13.88	7.06	6.17	6.43	6.17	12.03
ADJUSTMENT FACTOR, * INCREASE	0.0%	0.0%	6.1%	187.9%	14.4%	50.2%	15.5%	14.4%	0.0%	4.2%	0.0	0.1%

TABLE N-12. VEHICLE TRAVEL TIME PATTERNS AND OPERATING MODES FOR VISION 2000 ALTERNATIVES IN 2010

	PORTION			DI	STRIBUTIO	N OF TRAV	EL BY TRI	P DURATIO	N INTERVA	LS		
TRIP TYPE	OF TOTAL TRIPS	UNDER 8 MINUTES	8 - 10 MINUTES	10 - 15 MINUTES	15 - 20 Minutes	20 - 25 MINUTES	25 - 30 MINUTES		35 - 40 MINUTES	40 - 45 MINUTES	45 - 50 MINUTES	50 - 120 MINUTES
H-W	40.00%	10.00%	5.00%	15.00%	20.00%	15.00%	10.00%	5.00%	5.00%	5.00%		
H-S	0.00%	35.00%	25.00%		12.00%		2.00%	1.00%		1.00%	5.00%	5.00
H-0	5.00%	20.00%	20.00%	25.00%	15.00%	10.00%	5.00%	1.00%		1.00%	1.00%	1.00x 1.00x
0-W	50.00%	15.00%	10.00%	15.00%	20.00%	10.00%	10.00%	5.00%	5.00%	3.00%	3.00%	4.00%
0-0	5.00%	17.50%	20.00%	25.00%	15.00%	10.00%	5.00%	2.50%	1.00%	1.00%	1.00%	2.00%
INT TRK	0.00%	85.00%	10.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
REG TRK	0.00%	5.00%	5.00%	5.00%	10.00%	20.00%	20.00%	10.00%	10.00%	5.00%	5.00%	5.00%
EXT TRK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	80.00%
SUM/MEAN	100.00%	13.38%	9.00%	16.00%	19.50%	12.00%	9.50%	4.68%	4.60%	3.60%	3.60%	4.15%

CUMULATIVE TRIP OPERATING MODES (FOR TOTAL EMISSIONS ANALYSES):

TRIP	MEAN TRAVEL TIME	MEAN COLD	MEAN HOT	MEAN HOT	NONCAT COLD	NONCAT HOT	CATALYST COLD	CATALYST HOT
TYPE	(MINUTES)	START Mode	START	STABLE	START	START	START	START
	(MINOIES)	MUUE	MODE	MODE	MODE	MODE	MODE	MODE
H-W	24.75	44.52*	3.61%	51.86%	38.53%	9.61%	44.59%	3,55%
H-S	12.50	41.31%	37.10%	21.59%	26.35%	52.06%	41.47%	
H-0	14.73	47.21%	22.13%	30.66%	30.08%	39.26%	47.39%	
0-W	21.70	34.39%	20.72%	44.89%	22.45%	32.66%	34.52%	
0-0	15.93	19.31%	48.03%	32.66%	5.56%	61.79%	19.46%	
INT TRK	6.20	76.32%	21.51%	2.17%	59.33%	38.50%	76.51%	
REG TRK	28.85	26.87%	12.03%	61.11%	19.70%	19.19%	26.95%	
EXT TRK	77.50	8.21%	4.59%	87.19%	5.11%	7.70%	8.25%	
MEANS	22.28	38.33%	15.31%	46.36%	28.42%	25.23%	38.44%	15.21%

TABLE N-13. PORT OF OAKLAND/FISCO EMPLOYEE COMMUTE TRAVEL PATTERNS

RESIDENCY	EMPLOYEE TRIPS	PERCENT OF TRIPS	BAY AREA DISTANCE (MILES)	BAY AREA MILEAGE INCREMENT
OAKLAND/PIEDMONT ALAMEDA BERKELEY/ALBANY/EMERYVILLE SAN LEANDRO/SAN LORENZO HAYWARD/CASTRO VALLEY UNION CITY FREMONT/NEWARK DUBLIN/LIVERMORE/PLEASANTON SAN PABLO/PINOLE/RODEO RICHMOND/EL CERRITO PITTSBURG/ANTIOCH CONCORD/MARTINEZ ORINDA/LAFAYETTE/WALNUT CREEK ALAMO/DANVILLE/SAN RAMON SAN FRANCISCO SAN FRANCISCO SAN FRANCISCO LONGSHORE TRIPS SAN MATEO COUNTY SANTA CLARA COUNTY MARIN COUNTY NAPA/SONOMA COUNTIES SOLANO COUNTY	683 24 22 89 235 23 38 23 43 157 114 28 8 5 111 112 138 82 15 34 236	30.77% 1.08% 0.99% 4.01% 10.59% 1.04% 1.71% 1.04% 7.07% 5.14% 1.26% 0.36% 0.23% 5.00% 5.05% 6.22% 3.69% 0.68% 1.53% 10.63%	5.05 5.92 6.51 14.20 20.12 21.90 24.86 31.96 14.20 10.06 27.23 24.86 15.39 24.86 13.02 13.02 21.31 66.29 22.49 43.80 36.70	1.55 0.06 0.06 0.57 2.13 0.23 0.43 0.33 0.28 0.71 1.40 0.31 0.06 0.06 0.65 0.66 1.32 2.45 0.15 0.67 3.90
TOTALS	2,220	100.00%		17.98

Notes: Residency distribution data provided by Dowling Associates.
All distances estimated by map-measurer tracing of higway routes on a 1:36,750 scale map for Oakland, and 1:150,000 scale maps for other locations.

TABLE N-14. PORT OF OAKLAND TRUCK TRAVEL PATTERNS WITHIN THE BAAQMD

DESTINATION	TRUCK TRIPS	PERCENT OF TRIPS	BAY AREA DISTANCE (MILES)	BAY AREA MILEAGE INCREMENT
OAKLAND ALAMEDA BERKELEY/ALBANY/EMERYVILLE SAN LEANDRO/SAN LORENZO HAYWARD/CASTRO VALLEY UNION CITY FREMONT/NEWARK DUBLIN/LIVERMORE/PLEASANTON SAN PABLO/PINOLE/RODEO RICHMOND PITTSBURG/ANTIOCH CONCORD/MARTINEZ ALAMO/DANVILLE/SAN RAMON SAN FRANCISCO SAN MATEO COUNTY SANTA CLARA COUNTY MARIN COUNTY NAPA/SONOMA COUNTIES SOLANO COUNTY SACRAMENTO AREA SAN JOAQUIN/STANISLAUS COUNTIES FRESNO/MERCED/MADERA COUNTIES KERN/KINGS/TULARE COUNTIES SANTA CRUZ COUNTY OTHER CALIFORNIA OTHER STATES	892 11 15 103 95 43 35 5 17 209 19 20 5 165 57 136 8 34 61 165 227 164 20 7 105 101	32.81% 0.40% 0.55% 3.79% 3.49% 1.58% 1.29% 0.18% 0.63% 7.69% 0.70% 0.74% 0.18% 6.07% 2.10% 5.00% 0.29% 1.25% 2.24% 6.07% 8.35% 6.03% 0.74% 0.26% 3.86% 3.71%	6.51 5.92 6.51 14.20 20.12 21.90 24.86 31.96 14.20 10.06 27.23 24.86 13.02 21.31 66.29 22.49 43.80 36.70 49.72 45.57 45.57 45.57 45.57	2.14 0.02 0.04 0.54 0.70 0.35 0.32 0.06 0.09 0.77 0.19 0.18 0.05 0.79 0.45 3.32 0.07 0.55 0.82 3.02 3.80 2.75 0.34 0.14
TOTALS	2,719	100.00%		25.09
BAY AREA SUBTOTAL: SACRAMENTO: SAN JOAQUIN VALLEY: CENTRAL COAST: OTHER CALIFORNIA: OTHER STATES:		70.98% 6.07% 15.12% 0.26% 3.86% 3.71%		16.11 49.72 45.57 55.63 45.57 49.72

Notes: Truck travel patterns from Port of Oakland 1993 truck survey.
All distances estimated by map-measurer tracing of higway routes on 1:150,000 scale maps.

TABLE N-15. SUMMER REACTIVE ORGANIC COMPOUND AND NITROGEN OXIDE EMISSION RATES FOR 2010

15 25 35 45 55 (qrams/rrtp) (qq 0.44 0.30 0.27 0.24 0.25 0.26 0.21 0.45 0.31 0.27 0.25 0.26 0.27 0.21 0.46 0.32 0.29 0.26 0.27 0.22 0.21 0.41 0.27 0.24 0.22 0.26 0.21 0.21 0.41 0.23 0.20 0.26 0.27 0.26 0.21 0.44 0.23 0.20 0.26 0.27 0.21 0.44 0.23 0.20 0.26 0.21 0.21 0.45 0.31 0.27 0.26 0.21 0.21 0.44 0.23 0.20 0.26 0.21 0.21 0.44 0.30 0.27 0.26 0.22 0.21 0.45 0.31 0.22 0.26 0.21 0.21 0.44 0.23 0.24 0.25		<u>.</u>		Exhaust ROG Emission Rates		(grams/mile) by Speed (mph)	(mph)	Hot Soak	Other Evap	Exhaust NOx	Exhaust NOx Emission Rates (grams/mile) by Speed (mph)	tes (grams/m	ile) by Speec	(mph)
1. 8 3 H M 0.44 0.30 0.27 0.25 0.21 1.21 0.51 0.42 0.41 0.48 0.47 0.53 H S 0 0.45 0.13 0.26 0.27 0.21 1.21 0.51 0.48 0.47 0.53 H S 0 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.51 0.46 0.47 0.43 D M 0 0.41 0.27 0.29 0.26 0.27 0.21 1.21 0.51 0.42 0.41 0.46 0.41 0.46 0.41 0.42 0.41 0.51 0.42 0.42 0.21 1.21 0.51 0.42 0.41 0.42 0.42 0.22 0.22 0.22 0.21 1.21 0.51 0.41 0.41 0.42 0.41 0.42 0.42 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.42 0.41 0.42 0.41 0.42 0.41 0.42 0.41 0.42	Land Use	Pur		25	35	45	55	KOG Rates (grams/trip)	ROG Rates . (gm/veh-day)	15	25	35	45	55
Harrow H	2, 8	∃ ∃	0.44	0.30	0.27	0.24	0.25	0.21	1 21	0 61	6 45			
H-0 0.46 0.32 0.29 0.28 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-M 0.41 0.27 0.22 0.21 1.21 1.21 0.42 0.43 0.49 0.20 0.25 0.25 0.25 0.25 0.21 1.21 0.51 0.42 0.48 0.41 0.49 0.41 0.49		H∙S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.51	7 7 0	0.41	0.40	20.0
6-4 0.41 0.27 0.24 0.22 0.21 1.21 1.21 0.51 0.42 0.41 0-0 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.44 0-0 0.37 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.44 0.41 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.22 0.22 0.22 0.22 0.22 0.22 0.47 0.44 <td></td> <td>H-0</td> <td>0.46</td> <td>0.32</td> <td>0.29</td> <td>0.26</td> <td>0.27</td> <td>0.21</td> <td>1.21</td> <td>0.56</td> <td>0.47</td> <td>0.45</td> <td>3 5</td> <td>)0.0 990</td>		H-0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.45	3 5)0.0 990
5 HH 0.44 0.45 0.29 0.29 0.29 0.25 0.21 1.21 0.51 0.42 0.41 0.49 0.41 0.49 0.44 0.30 0.27 0.28 0.26 0.21 1.21 0.55 0.49 0.47 0.48 0.49 0.40 0.20 0.22 0.25 0.25 0.21 1.21 0.55 0.45 0.47 0.46 0.22 0.29 0.26 0.22 0.21 1.21 0.55 0.42 0.41 0.48 0.49 0.44 0.20 0.20 0.20 0.22 0.22 0.21 1.21 0.55 0.45 0.47 0.46 0.53 0.20 0.20 0.20 0.21 1.21 0.55 0.42 0.41 0.48 0.49 0.44 0.20 0.22 0.22 0.22 1.21 0.51 0.55 0.42 0.41 0.48 0.49 0.44 0.20 0.22 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.49 0.44 0.20 0.22 0.22 0.22 0.21 1.21 0.51 0.45 0.42 0.41 0.48 0.49 0.44 0.20 0.20 0.29 0.20 0.20 0.21 1.21 0.51 0.45 0.40 0.40 0.40 0.40 0.40 0.40 0.22 0.22		M-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.00
5 H-M 0.44 0.30 0.27 0.24 0.25 0.21 1.21 1.21 0.51 0.48 0.47 0.48 0.47 0.48 H-S 0.46 0.31 0.27 0.26 0.21 1.21 0.57 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.47 0.48 0.49 0.44 0.49 0.44 0.44 0.44 0.44 0.20 0.29 0.22 0.21 1.21 0.51 0.41 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 <td></td> <td>0-0</td> <td>0.37</td> <td>0.23</td> <td>0.20</td> <td>0.18</td> <td>0.19</td> <td>0.21</td> <td>1.21</td> <td>0.51</td> <td>0.42</td> <td>0.41</td> <td>0.47</td> <td>0.61</td>		0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
H-5 0.45 0.45 0.45 0.24 0.22 0.26 0.21 1.21 0.57 0.49 0.47 0.53 H-0 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-4 0.46 0.27 0.24 0.22 0.22 0.21 1.21 0.51 0.47 0.46 0.53 0-4 0.44 0.23 0.20 0.24 0.25 0.21 1.21 0.51 0.42 0.41 0.49 0.47 0.48 H-8 0.44 0.20 0.25 0.26 0.27 0.21 0.21 0.21 0.42 0.41 0.49 0.47 0.48 H-8 0.44 0.23 0.29 0.26 0.27 0.21 1.21 0.51 0.42 0.41 0.46 0.53 0.4 0.45 0.23 0.24 0.22 0.22 0.21 0.21 0.21 0.		H-	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
H-0 0.46 0.32 0.29 0.27 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.22 0.22 0.22 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-0 0.31 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.49 0.41 0.49 H-S 0.45 0.31 0.27 0.26 0.26 0.21 1.21 0.51 0.42 0.41 H-S 0.45 0.32 0.26 0.27 0.22 0.21 0.21 0.42 0.41 0.42 0.43 H-S 0.45 0.22 0.22 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.42 0.41 0.46 0.43 0-0 0.34 0.23 0.24 0.22 0.21 1.21 <t< td=""><td></td><td>H.S</td><td>0.45</td><td>0.31</td><td>0.27</td><td>0.25</td><td>0.26</td><td>0.21</td><td>1.21</td><td>0.57</td><td>0.48</td><td>0.47</td><td>0.53</td><td>0.67</td></t<>		H.S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
0-M 0.44 0.27 0.24 0.22 0.21 1.21 0.51 0.42 0.41 0.49 0-0 0.37 0.23 0.20 0.21 1.21 0.51 0.42 0.41 0.49 H-M 0.44 0.30 0.27 0.24 0.25 0.21 1.21 0.57 0.42 0.41 H-S 0.45 0.31 0.27 0.26 0.26 0.21 1.21 0.57 0.49 0.49 H-O 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.57 0.49 0.59 0-M 0.44 0.20 0.26 0.27 0.21 1.21 0.51 0.42 0.41 0-M 0.41 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.42 0.41 0.42 0.41 0.42 0.41 0.42 0.41 0.42 0.41 0.42 0.41 0.42 0.41 0.		H.O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
H-W 0.44 0.23 0.24 0.24 0.24 0.25 0.24 0.25 0.24 0.25 0.24 0.25 0.24 0.27 0.24 0.25 0.21 1.21 0.51 0.46 0.41 0.47 0.44 H-W 0.46 0.31 0.27 0.25 0.25 0.21 1.21 0.56 0.47 0.46 0.47 0.46 0.47 0.46 0.53 0.46 0.47 0.46 0.47 0.46 0.53 0.46 0.53 0.46 0.47 0.46 0.53 0.20 0.22 0.21 1.21 0.51 0.46 0.41 0.46 0.53 0.20 0.20 0.21 1.21 0.51 0.41 0.46 0.41 0.49 0.41 0.51 0.41 0.41 0.41 0.41 0.41 0.42 0.22 0.21 1.21 0.51 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41		34.0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
H-M 0.44 0.30 0.27 0.24 0.25 0.21 1.21 0.51 0.42 0.48 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.27 0.27 0.24 0.22 0.27 0.27 0.24 0.27 0.27 0.21 1.21 1.21 0.55 0.47 0.46 0.53 0.24 0.22 0.22 0.21 1.21 0.55 0.47 0.46 0.53 0.4 0.37 0.29 0.29 0.29 0.29 0.20 0.21 1.21 0.51 0.47 0.48 0.0 0.37 0.29 0.26 0.21 1.21 0.51 0.42 0.41 0.44 0.4 0.45 0.32 0.26 0.25 0.21 1.21 0.21 0.42 0.41 0.48 0.4		0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
H-S 0.45 0.31 0.25 0.26 0.21 1.21 0.57 0.48 0.47 0.53 H-O 0.46 0.32 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-M 0.44 0.24 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.46 0.53 0-M 0.41 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.46 0.47 0.46 0.54 H-W 0.44 0.20 0.20 0.22 0.21 1.21 0.51 0.41 0.47 0.46 H-W 0.44 0.30 0.27 0.26 0.21 1.21 0.51 0.41 0.43 0.43 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 <t< td=""><td>JIT AREA</td><td>M-H</td><td>0.44</td><td>0.30</td><td>0.27</td><td>0.24</td><td>0.25</td><td>0.21</td><td>1.21</td><td>0.51</td><td>0.42</td><td>0.41</td><td>0.48</td><td>0.62</td></t<>	JIT AREA	M -H	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
H-O 0.46 0.27 0.29 0.27 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.41 0.42 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.41 0.42 0.42 0.21 1.21 0.51 0.42 0.41 0.44 0.44 0.20 0.24 0.25 0.21 1.21 0.51 0.42 0.41 0.44 0.44 0.44 0.44 0.44 0.25 0.26 0.21 1.21 0.51 0.42 0.43 0.42 0.24 0.41 0.44 0.44 0.24 0.24 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.21 0.22 0.22 0.21 0.21 0.21 0.22 0.21 0.21		H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
0-M 0.41 0.27 0.24 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-0 0.37 0.23 0.20 0.19 0.21 1.21 0.51 0.42 0.41 0.48 0-0 0.37 0.23 0.29 0.29 0.21 1.21 0.51 0.48 0.47 0.48 H-S 0.46 0.31 0.27 0.26 0.21 1.21 0.51 0.49 0.47 0.48 H-S 0.46 0.32 0.26 0.27 0.21 1.21 0.51 0.49 0.47 0.48 H-O 0.46 0.32 0.29 0.26 0.21 1.21 0.51 0.42 0.41 0.49 0.43 0-M 0.41 0.22 0.22 0.21 1.21 0.51 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.41 0.		H.O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
0-0 0.37 0.23 0.23 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.48 H-W 0.44 0.30 0.27 0.26 0.21 1.21 0.51 0.42 0.41 0.48 H-S 0.45 0.31 0.27 0.26 0.21 1.21 0.57 0.48 0.47 0.48 H-S 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.57 0.48 0.47 0.46 0-W 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.51 0.46 0.47 0.46 0.53 0-W 0.41 0.27 0.22 0.22 0.21 1.21 0.51 0.41 <t< td=""><td></td><td>M-0</td><td>0.41</td><td>0.27</td><td>0.24</td><td>0.22</td><td>0.22</td><td>0.21</td><td>1.21</td><td>0.51</td><td>0.42</td><td>0.41</td><td>0.48</td><td>0.61</td></t<>		M-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
H-M 0.44 0.30 0.27 0.24 0.25 0.21 1.21 0.57 0.48 0.47 0.48 H-S 0.45 0.45 0.26 0.21 1.21 0.57 0.48 0.47 0.53 H-O 0.45 0.32 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-M 0.41 0.27 0.24 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-M 0.41 0.27 0.24 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-0 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.48 H-M 0.44 0.30 0.27 0.24 0.21 1.21 0.51 0.41 0.41 0.41 H-S 0.45 0.31 0.25 0.26 0.27 0.21 </td <td></td> <td>0-0</td> <td>0.37</td> <td>0.23</td> <td>0.20</td> <td>0.18</td> <td>0.19</td> <td>0.21</td> <td>1.21</td> <td>0.51</td> <td>0.42</td> <td>0.41</td> <td>0.47</td> <td>0.61</td>		0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
H-S 0.45 0.31 0.27 0.25 0.26 0.21 1.21 0.57 0.48 0.47 0.53 0.59 0.40 0.47 0.53 0.40 0.44 0.53 0.29 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0.40 0.40 0.41 0.27 0.24 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.20 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.47 0.45 0.31 0.27 0.25 0.26 0.21 1.21 0.51 0.45 0.48 0.47 0.53 0.40 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.57 0.48 0.47 0.53 0.40 0.40 0.44 0.20 0.20 0.20 0.20 0.21 1.21 0.55 0.40 0.45 0.45 0.45 0.45 0.25 0.25 0.25 0.21 1.21 0.55 0.47 0.46 0.53 0.40 0.40 0.40 0.40 0.40 0.40 0.20 0.20	SPRR TERMINAL	÷	0.44	0.30	0.27	0.24	0.25	0.21	1.21	15.0	. 0 42	0 41	48	63
H-O 0.46 0.32 0.29 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-W 0.41 0.27 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-W 0.41 0.27 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-0 0.37 0.23 0.20 0.18 0.21 1.21 0.51 0.42 0.41 0.47 H-W 0.45 0.31 0.27 0.26 0.21 1.21 0.51 0.48 0.47 0.53 H-S 0.46 0.32 0.26 0.27 0.21 1.21 0.56 0.47 0.53 0-W 0.46 0.23 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-W 0.41 0.27 0.22 0.21 1.21 0.51 0.41 0.41 0.41 0.41 </td <td></td> <td>H-S</td> <td>0.45</td> <td>0.31</td> <td>0.27</td> <td>0.25</td> <td>0.26</td> <td>0.21</td> <td>1.21</td> <td>0.57</td> <td>0.48</td> <td>0.47</td> <td>0.53</td> <td>0.67</td>		H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
0-W 0.41 0.27 0.24 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-0 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.48 H-W 0.44 0.23 0.27 0.26 0.21 1.21 0.57 0.48 0.47 0.53 H-S 0.45 0.31 0.27 0.26 0.21 1.21 0.57 0.48 0.47 0.53 H-O 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-W 0.41 0.27 0.29 0.20 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-W 0.41 0.27 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-W 0.03 0.23 0.23 0.29 0.21 1.21 </td <td></td> <td>н-0</td> <td>0.46</td> <td>0.32</td> <td>0.29</td> <td>0.26</td> <td>0.27</td> <td>0.21</td> <td>1.21</td> <td>0.56</td> <td>0.47</td> <td>0.46</td> <td>0.53</td> <td>0.66</td>		н-0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	0.66
0-0 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.47 0.48 H-W 0.44 0.30 0.27 0.24 0.25 0.21 1.21 0.51 0.42 0.41 0.48 H-S 0.45 0.31 0.27 0.26 0.21 1.21 0.57 0.48 0.47 0.53 H-O 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0-W 0.41 0.27 0.22 0.22 0.21 1.21 0.56 0.47 0.46 0.53 0-W 0.41 0.27 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0-0 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.47		4.0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
H-W 0.44 0.30 0.27 0.24 0.25 0.21 1.21 0.51 0.42 0.41 0.48 H-W 0.44 0.32 0.29 0.26 0.21 1.21 0.57 0.48 0.47 0.53 H-O 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0.40 0.41 0.27 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.40 0.50 0.90 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.49 0.47 0.46		0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
0.45 0.31 0.27 0.25 0.26 0.21 1.21 0.57 0.48 0.47 0.53 0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0.41 0.27 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.47	UP RAIL TERMINAL	H-H	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
0.46 0.32 0.29 0.26 0.27 0.21 1.21 0.56 0.47 0.46 0.53 0.41 0.27 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.37 0.23 0.20 0.18 0.19 0.21 1.21 0.51 0.42 0.41 0.47		H-S	0.45	0.31	0.27	0.25	97.0	0.21	1.21	0.57	0.48	0.47	0.53	0.67
0.41 0.27 0.24 0.22 0.22 0.21 1.21 0.51 0.42 0.41 0.48 0.37 0.23 0.20 0.19 0.21 1.21 0.51 0.42 0.41 0.47		H-0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
$0.37 \qquad 0.23 \qquad 0.20 \qquad 0.18 \qquad 0.19 \qquad 0.21 \qquad 1.21 \qquad 0.51 \qquad 0.42 \qquad 0.41 \qquad 0.47$		M-0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.45	0.41	0.48	0.61
		0-0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61

TABLE N.15. SUMMER REACTIVE ORGANIC COMPOUND AND NITROGEN OXIDE ENISSION RATES FOR 2010

	ָרָר רָרָּ	xhaust ROG I	Emission Rate	es (grams/mi	Exhaust ROG Emission Rates (grams/mile) by Speed (mph)	(mph)	Hot Soak	Other Evap	Exhaust NOx	Exhaust NOx Emission Rates (grams/mile) by Speed (mph)	es (grams/mi	le) by Speed	(mph)
Land Use P	Purpose	15	25	35	45	55	KUG Kates (grams/trip)	ROG Rates . (gm/veh-day)	15	25	35	45	55
MARINE TERMINAL AREAS	H-1	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H·S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	н-0	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	99.0
	∦ -0	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	0.0	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
ON-SITE TRUCK TRIPS	0-0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
BAY AREA TRUCK TRIPS	0-0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
LONG DISTANCE TRUCK TRIPS	0-0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
PORT OF RICHMOND TRUCKS	0-0	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

H-W = home - work trips

H-S = home - shopping trips

H-O = home - other trips 0-W = other - work trips

0.0 = other . other trips

Emission rates for California vehicles were calculated for 2010 using the California Air Resources Board EMFAC7F computer program for exhaust emission rates, with diurnal and resting loss emissions calculated using data from the EMFAC7F model and calculation procedures presented in documentation reports for the EMFAC7EP and BURDEN7C models (California Air Resources Board 1991, 1992, 1993).

Exhaust emission rates are based on an air temperature of 70 degrees Fahrenheit; diurnal emission rates are based on a summer day temperature profile (55-80 degree Fahrenheit range).

Exhaust emission rates incorporate cold start and hot start rate increments based on aggregate start mode travel fractions calculated from assumed trip-type travel time frequency distributions.

Emission rates for employment-based traffic includes only passenger vehicles.

Emission rates for internal and external truck traffic includes only heavy trucks (95% diesel, 5% gasoline).

TABLE N-16. VEHICLE-RELATED PM10 AND SUMMER/WINTER CARBON MONOXIDE EMISSION RATES FOR 2010

Land Use Purl FISCO AREAS 1, 2, & 3 FISCO AREAS 4 & 5	1	בעדה עפרב	DM10 Dato										
≈ 8		(gm/mile)	(gm/mile)	15	25	35	45	55	15	25	35	45	55
e 5	:												
ISCO AREAS 4 & 5	¥ Ė	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
ISCO AREAS 4 & 5	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
ISCO AREAS 4 & 5	0-н	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
ISCO AREAS 4 & 5	М-0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
ISCO AREAS 4 & 5	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
	#:	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	н-0	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	М-0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
JIT AREA	¥	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-0	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	11-0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
SPRR TERMINAL	÷	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	Н-0	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	™ .0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0.0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
UP RAIL TERMINAL	ж.н	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H·S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	н-0	0.01	3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	M -0	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63

TABLE N.16. VEHICLE-RELATED PH10 AND SUMMER/WINTER CARBON MONOXIDE EMISSION RATES FOR 2010

	Trio	Exhaust PM10 Rate	Entrained PM10 Rate	Summer CI	Summer CO Emission Rates (gm/mi) by Speed (mph)	ites (gm/mi)	by Speed (mp	h)	Winter (Winter CO Emission Rates (gm/mi) by Speed (mph)	ates (gm/mi)	by Speed (m	ph)
Land Use	Purpose		(gm/mile)	15	25	35	45	. 22	15	25	35	45	55
MARINE TERMINAL AREAS	H-N		3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	¥.S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	н-0		3.10	5.37	4.25	3.81	3.66	3.98	69.9	5.46	4.96	4.79	5.14
	¾ ·0		3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	0-0	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
ON-SITE TRUCK TRIPS	0-0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
BAY AREA TRUCK TRIPS	0-0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
LONG DISTANCE TRUCK TRIPS	0-0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
PORT OF RICHMOND TRUCKS	0.0	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60

Notes: PM10 = inhalable particulate matter

CO = carbon monoxide

H-W = home · work trips

H.S = home - shopping trips

H⋅O = home - other trips

0-0 = other - other trips 0-W * other - work trips

Emission rates for California vehicles calculated for 2010 using the California Air Resources Board EMFAC7F computer program.

Entrained PM10 emission rates include tire wear plus 2.9 grams/VMT of resuspended paved roadway dust.

Summer CO emission rates based on an air temperature of 70 degrees Fahrenheit; winter CO emission rates based on an air temperature of 50 degrees Fahrenheit.

Exhaust emission rates incorporate cold start and hot start rate increments based on aggregate start mode travel fractions calculated from assumed trip-type travel time frequency distributions.

Emission attes for employment-based traffic includes only passenger vehicles.

Emission rates for internal and external truck traffic includes only heavy trucks (95% diesel, 5% gasoline).

TABLE N-17. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, NO ACTION ALTERNATIVE

Land Use or Trip Generation Category Ti	Trip Estimate Basis		Base Trip Vehicle Seneration Generation Rate Rate	Vehicle eneration . Rate	Base Trip Vehicle P/A Trip Rate Splits Generation Generation	Splits tractions	Base Trip Volume	* Productions Number of W Internal Internal Trip Destinations Productions	Productions Number of W Internal Internal Trip estinations Productions	Number of % Attractions ternal Trip W Internal Productions Origins	Attractions Number of Internal/ W Internal Internal Trip External Origins Attractions Trips	Internal/ External Trips	inal/ Net ernal Trips Adjusted Trips Generated Trip Rate	Trip Rate Adjusted Adjustment Trip Rate Factor	Trip Rate Adjustment Factor
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	YEES	3.50	0.6	10\$	\$06	1,750	* 0	0	*0	0	1.750	1.750	3.5	X0 0
FISCO AREAS 4 & 5	200 EMPLOYEES	YEES	3.50	9.0	101	\$ 06	700	**	0	*0	0	700		3.5	0.0
JIT AREA	0 EMPLOYEES	YEES	0.00	0.0	101	\$ 06	0	*0	0	*0	•	0	0	0.0	0.0
SPRR TERMINAL	130 EMPLOYEES	YEES	3.50	9.0	10#	\$06	455	*0	0	*0	0	455	455	3.5	0.0
UP RAIL TERMINAL	82 EMPLOYEES	YEES	3.50	9.0	101	\$06	287	**	0	*0	•	287	287	3.5	0.0
MARINE TERMINAL AREAS	1.835 EMPLOYEES	YEES	3.50	9.0	10%	\$ 06	6,423	*0	0	*0	•	6,423	6.423	3.5	0.0
ON-SITE TRUCK TRIPS	469 ACRES	S	1.26	0.0	20\$	201	283	*0	0	*0	•	583	589	1.3	0.0
BAY AREA TRUCK TRIPS	469 ACRES	S	20.93	0.0	20\$	201	9,815	* 0	0	**	0	9,815	9,815	20.9	0.0
LONG DISTANCE TRUCK TRIPS	469 ACRES	£	8.57	0.0	20\$	20 \$	4.021	*0	•	\$0	•	4,021	4.021	8.6	0.0
PORT OF RICHMOND TRUCKS	469 ACRES	£3	0.02	0.0	20	203	23	***	0	**	0	23	23	0.0	0.0
															:
TOTALS							24,063		0		0	24,063	24,063		0.0

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Assoicates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Port of Richmond truck trips are assumed to be 3.8% of total marine-to-rail truck trips.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-18. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIOMS, NO ACTION ALTERNATIVE

			Percent	Net	Ę	Adjusted	Adjusted	Overall	Mean Trip	Percent	Percent of Travel Time by Speed (mph)	Time by Spec	d (mph)	
		Trp	of Net	Trip	Program	Net	Net	₽	Duration					
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Tr1ps	Effectiveness	(Minutes)	15	52	35	45	55
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	3. ±	40.0%	1.4	**	1.4	700		24.75	5.0\$	10.01	20.0\$	25.0\$	40.0
		÷S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0	25.0\$	15.0%	20.0%
		0- +	5.0	0.2	*0	0.2	88		14.73	10.01	25.01	35.0\$	15.0%	15.0
		3 -0	50.0\$	1.8	8	1.8	875		21.70	5.0\$	20.0%	20.0	20.0	35.0
		0.0	5.0\$	0.5	**	0.2	88		15.93	10.01	25.0\$	35.0\$	15.0\$	15.0\$
FISCO AREAS 4 & 5	200 EMPLOYEES	A-H	40.0\$	1.4	* 0	1.4	280		24.75	5.04	10.01	20 04	75	40
		H-S	0.0	0.0	*0	0.0	0		12.50	10.0	30.0%	25.0%	15.0	20.0
		0- H	5.0\$	0.2	8	0.2	35		14.73	10.01	25.0\$	35.0%	15.0\$	15.0\$
		N-0	50.0	1.8	*0	1.8	350		21.70	5.04	20.0%	20.0%	20.0	35.0\$
		0-0	5.0	0.2	**	0.2	35		15.93	10.01	25.0\$	35.0\$	15.01	15.0\$
JIT AREA	0 EMPLOYEES	÷	40.0%	0.0	* 0	0.0	.0		74 75	بر و	•	40 00	\$	4
		H-S	0.0	0.0	**	0.0	0		12.50	10.01	30.0	25.03	15 P. 15	40.04
		H-0	5.0	0.0	* 0	0.0	0		14.73	10.0%	25.0\$	35.0\$	15.0\$	15.0%
		M -0	50.0\$	0.0	*0	0.0	0		21.70	5.0\$	20.02	20.0\$	20.0%	35.04
	٠	0.0	5.0%	0.0	80	0.0	0		15.93	10.0	25.0\$	35.0\$	15.01	15.0\$
SPRR TERMINAL	130 EMPLOYEES	ž	40.0\$	1.4	**	1.4	182		24.75	5.0	10.01	20.02	25.02	40 04
		H.S	0.0	0.0	8	0.0	•		12.50	10.01	30.0%	25.0\$	15.0\$	20.0
		0- H	5.0\$	0.2	*	0.2	23		14.73	10.0	25.0%	35.0\$	15.01	15.0\$
		M -0	50.0	1.8	X 0	1.8	228		21.70	5.0\$	20.0%	20.0%	20.0\$	35.0\$
		0-0	5.0\$	0.2	* 0	0.2	23		15.93	10.0%	25.04	35.0\$	15.0\$	15.0\$
UP RAIL TERMINAL	82 EMPLOYEES	H	40.0	1.4	* 0	1.4	115		24.75	10,5	10 01	¥0 02 .	25.03	\$
		H-S	0.0	0.0	80	0.0	0		12.50	10.0%	30.0%	25.04	15.02	
		₩	5.0\$	0.2	10	0.2	14		14.73	10.0	25.01	35.0\$	15.0%	15.04
		№	\$0.0\$	1.8	**	1.8	144		21.70	5.0\$	20.0%	20.0%	20.0%	35.0
		0-0	5.0	0.2	**	0.2	14		15.93	10.01	25.0\$	35.0\$	15.0\$	15.0

TABLE N-18. TRIP PURPOSE, TOM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, NO ACTION ALTERNATIVE

		Trio	Percent of Net	Net	TCM	Adjusted	Adjusted	Overall TCM	Mean Trip Duration		Percent of Travel Tim	Percent of Travel Time by Speed (mph)	d (mph)	
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Trips	Trips Effectiveness	_	;	52	Ж	45	55
MARINE TERMINAL AREAS	1,835 EMPLOYEES	¥	40.0\$	1.4	*0	1.4	2,569		24.75	5.0	10.01	20.0	25.0%	40.0
		H-S	0.0	0.0	**	0.0	0		12.50	10.01	30.0\$	25.0\$	15.0%	20.0%
		н-0	5.0	0.2	* 0	0.2	321		14.73	10.0%	25.0\$	35.0\$	15.0\$	15.01
		M-0	50.0\$	1.8	**	1.8	3,212		21.70	5.0	20.0\$	20.0	20.0\$	35.0\$
		0.0	5.0%	0.2	*0	0.2	321		15.93	10.01	25.0%	35.0\$	15.0\$	15.0\$
ON-SITE TRUCK TRIPS	469 ACRES	0-0	100.0\$	1.3	*6	1.3	289		6.20	75.0\$	20.0%	5.0%	0.0%	0.0
BAY AREA TRUCK TRIPS	469 ACRES	0-0	100.01	20.9	X 0	20.9	9,815		28.85	15.0\$	25.0\$	30.0\$	20.0\$	10.01
LONG DISTANCE TRUCK TRIPS	S 469 ACRES	0-0	100.01	9.6	*0	8.6	4,021		77.50	10.0%	20.0\$	25.0\$	25.0\$	20.0\$
PORT OF RICHHOND TRUCKS	469 ACRES	0-0	100.01	0.0	*	0.0	23		18.00	10.01	20.0\$	25.0\$	25.0\$	20.0\$
TOTALS							24,065	0.0						

Notes: H·W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

0-W = other-work trips

0.0 = other-other trips

TCM - transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Wehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-19. VEHICLE TRAVEL SUMMARY, NO ACTION ALTERNATIVE

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	DAILY TRIPS	MEAN IKIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	3	700	24.8	17 94	12 561	73 67
		H-S	0	12.5	7.40	100,331	35.5
		Н-0	88	14.7	8,59	95/	35.0
		M-0	875	21.7	14.83	12.975	41.0
		0-0	88	15.9	9.29	818	35.0
FISCO AREAS 4 & 5	200 EMPLOYEES	ж- Н	280	24.8	17.94	5.024	43.5
		H-S	0	12.5	7.40	0	35.5
		0-н	35	14.7	8.59	301	35.0
		M -0	350	21.7	14.83	5,190	41.0
		0-0	35	15.9	9.29	325	35.0
JIT AREA	0 EMPLOYEES	3-1	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		н-0	0	14.7	8.59	0	35.0
		м-0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.29	0	35.0
SPRR TERMINAL	130 EMPLOYEES	¥-H	182	24.8	17.94	3.266	43.5
		H·S	0	12.5	7.40	0	35.5
		H-0	23	14.7	8.59	198	35.0
		M-0	228	21.7	14.83	3,381	41.0
		0-0	23	15.9	9.29	214	35.0
UP RAIL TERMINAL	82 EMPLOYEES	¥-H	115	24.8	17.94	2,064	43.5
		H-S	0	12.5	7.40	0	35.5
		0-Н	14	14.7	8.59	120	35.0
		¾ -0	144	21.7	14.83	2,135	41.0
		0-0	14	15.9	9 29	130	35.0

TABLE N-19. VEHICLE TRAVEL SUMMARY, NO ACTION ALTERNATIVE

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	1,835 EMPLOYEES	3. H H H C	2,569 0 321	24.8 12.5 14.7	17.94 7.40 8.59	46,097 0 2,758	43.5 35.5 35.0
ON-SITE TRUCK TRIPS	469 ACRES	* O O	3,212 321 589	71.7 15.9 6.2	14.83 9.29 1.86	47, 629 2, 983 1, 096	41.0 35.0 18.0
BAY AREA TRUCK TRIPS	469 ACRES	0-0	9,815	28.9	16.11	158,099	33.5
LONG DISTANCE TRUCK TRIPS	469 ACRES	0-0	4,021	77.5	48.44	194,767	37.5
PORT OF RICHMOND TRUCKS	469 ACRES	0-0	23	18.0	11.25	259	37.5
TOTAL C.				0 70	74		
		S-H	0. 0	0.0	0.00	09,012	43.5 0.0
		Н-0	481	14.8	8.59	4,133	34.9
		™ -0	4,809	21.7	14.83	71,309	41.0
		0.0	14,929	40.6	24.03	358,690	35.5
			24,065	33.8	20.91	503,144	37.1

Notes:

: H-W = home-work trips H-S = home-shopping trips H-O = home-other trips O-W = other-work trips O-O = other-other trips VMT = vehicle miles traveled

TABLE N-20. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, NO ACTION ALTERNATIVE

			Average		Exhaust	Exhaust	Total PM10	Summer	Winter	ROG	Ň	PM10	Summer CO	Winter CO
Land Use	Trip Estimate Basis	Trip Purpose	Distance (miles)	VMT by Category	ROG Rate (gm/mile)	NOx Rate (gm/mile)	Emission Rate (gm/mile)	CO Rate (gm/mile)	CO Rate (gm/mile)	Emissions (1bs/day)	Emissions (lbs/day)	Emissions (lbs/day)	Emissions (1bs/day)	Emissions (lbs/day)
														İ
FISCO AREAS 1, 2, 8 3	500 EMPLOYEES	¥	17.94	12,561	0.26	0.54	3.11	3.61	4.68	7.7	14.8	86.1	99.9	129.5
		¥.S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0÷	8.59	756	0.29	0.53	3.11	3.97	5.13	9.0	0.9	5.2	9.9	8.6
		≱ •	14.83	12.975	0.23	0.52	3.11	3.34	4.25	7.4	15.0	6.88	95.5	121.5
		0-0	9.29	818	0.21	0.47	3.11	2.94	3.61	0.4	0.9	5.6	5.3	6.5
FISCO AREAS 4 & 5	200 EMPLOYEES	ž	17.94	5,024	0.26	0.54	3.11	3.61	4.68	3.1	5.9	34.4	40.0	51.8
		¥.S	7.40	•	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-н	8.59	301	0.29	0.53	3.11	3.97	5.13	0.2	0.3	2.1	2.6	3.4
		34.0	14.83	5,190	0.23	0.52	3.11	3.34	4.25	3.0	6.0	35.6	38.2	48.6
		0-0	9.29	325	0.21	0.47	3.11	2.94	3.61	0.2	0.3	2.2	2.1	5.6
TIT ARFA	O FMPI OVEES	ž	17 94	c	3%	C 47		5	9	c	ć	c	ć	•
		S-±	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
		:	;	;	;	;	;	;						
SPRR TERMINAL	130 EMPLOYEES	:	17.94	3,266	0.26	0.54	3.11	3.61	4.68	2.0	3.9	22.4	26.0	33.7
		s ÷	7.40	o ;	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
) : E 6	6.5	198	87 E	26.53	3.11	3.9/	5.13	0.1	0.5	1.4	1.7	2.2
		.	3.5	180'5	57.0	76.0	3.11	3.34	4.25	6.1	3.9	23.2	24.9	31.7
		0-0	9.29	214	0.21	0.47	3.11	2.94	3.61	0.1	0.5	1.5	1.4	1.7
UP RAIL TERMINAL	82 EMPLOYEES	÷	17.94	2,064	0.26	0.54	3.11	3.61	4.68	1.3	2.4	. 14.1	16.4	21.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0÷	8.59	120	0.29	0.53	3.11	3.97	5.13	0.1	0.1	9.0	1.1	1.4
		M -0	14.83	2,135	0.23	0.52	3.11	3.34	4.25	1.2	2.5	14.6	15.7	20.0
		0-0	9.29	130	0.21	0.47	3.11	2.94	3.61	0.1	0.1	6.0	9.0	1.0

TABLE N-20. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, NO ACTION ALTERNATIVE

Land Use	Trip Estimate Basis	Tr1p Purpose	Average Trip Distance pose (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (ga/mile)	ROG Emissions (1bs/day)	NOx Emissions (1bs/day)	ROG NOX PM10 Summer CO Winter CO Emissions Emissions Emissions (1bs/day) (1bs/day) (1bs/day) (1bs/day) (1bs/day)	PMIO Summer CO Winter CO flons Emissions Emissions day) (lbs/day) (lbs/day)	Winter CO Emissions (lbs/day)
MARINE TERMINAL AREAS	1,835 EMPLOYEES	H.	17.94	46,097	0.26	0.54	3.11	3.61	4.68	28.2	54.4	316.0	366.8	475.3
		S + =	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		? ≯	14.83	47,629	0.29	0.53	3.11	3.97	5.13 4.25	2.1	3.2	18.9	24.1	31.2
		0-0	9.29	2,983	0.21	0.47	3.11	2.94	3.61	1.6	3.1	20.4	19.3	23.8
ON-SITE TRUCK TRIPS	469 ACRES	0-0	1.86	1,096	2.97	11.14	4.53	14.32	14.42	7.2	26.9	10.9	34.6	34.8
BAY AREA TRUCK TRIPS	469 ACRES	0-0	16.11	158,099	1.82	10.46	4.53	8.15	8.21	635.5	3,644.6	1,577.5	2,840.5	2,860.2
LONG DISTANCE TRUCK TRIPS	469 ACRES	0-0	48.44	194,767	1.67	10.84	4.53	7.59	7.64	731.3	4,653.0	1,943.4	3,259.5	3,282.5
PORT OF RICHMOND TRUCKS	469 ACRES	0-0	11.25	259	1.67	10.84	4.53	7.59	7.64	1.0	6.2	2.6	4.3	4.
TOTALS			20.91	503,144						1,463.3	8,503.9	4,555.3	7.278.3	7,643.8

ROG = reactive organic compounds

NOx - nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE N-21. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, NO ACTION ALTERNATIVE AND EMISSION RATES FOR 2010

		Net [Trip	Net Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions	mer Day ed Ozone issions	Average Daily Exhaust Plus Entrained	Average Daily Traffic- Related Carbon Monoxide Emissions	y Traffic n Monoxide ns
	Amount of	Internal	External	Total	Daily VMT	(pounds per day)	r day)	PM10 Emissions	(pounds per day)	r day)
Land Use	Development	Trips	Trips	Trips	Estimate	R0G	NOX	per day)	Summer	Winter
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	0	1,751	1,751	27,109	16.1	31.5	185.8	207.4	266.1
FISCO AREAS 4 & 5	200 EMPLOYEES	0	700	700	10,840	6.4	12.6	74.3	82.9	106.4
JIT AREA	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
SPRR TERMINAL	130 EMPLOYEES	0	426	456	7,058	4.2	8.2	48.4	54.0	69.3
UP RAIL TERMINAL	82 EMPLOYEES	0	287	287	4.449	2.6	5.2	30.5	34.0	43.7
MARINE TERMINAL AREAS	1,835 EMPLOYEES	0	6,423	6,423	99,467	59.0	115.7	681.8	761.0	976.4
ON-SITE TRUCK TRIPS	469 ACRES	589	0	289	1,096	7.2	26.9	10.9	34.6	34.8
BAY AREA TRUCK TRIPS	469 ACRES	0	9,815	9,815	158,099	635.5	3.644.6	1,577.5	2,840.5	2.860.2
LONG DISTANCE TRUCK TRIPS	469 ACRES	0	4.021	4,021	194,767	731.3	4,653.0	1,943.4	3,259.5	3.282.5
PORT OF RICHMOND TRUCKS	469 ACRES	0	23	23	259	1.0	6.2	2.6	4.3	4.4
									:	
Auto Trips:		0	9,617	9,617	148,924	88.3	173.2	1.020.8	1,139.3	1,461.9
Truck Trips:		289	13,859	14,448	354.221	1,375.0	8,330.7	3,534.5	6,139.0	6,181.9
Total		589	23.476	24,065	503,144	1,463.3	8,503.9	4,555.3	7,278.3	7.643.8

ROG = reactive organic compounds NOx = nitrogen oxides PM10 = inhalable particulate matter

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips

TABLE N-22. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, NO ACTION ALTERNATIVE

	Annual				nual Vehic Year) For		
Land Use	Vehicle Trips	Annual VMT	ROG	NOx	CO	S0x	PM10
FISCO AREAS 1, 2, & 3	437,750	6,777,324	2.01	3.94	28.37	0.22	23.23
FISCO AREAS 4 & 5	175,000	2,710,035	0.80	1.58	11.34	0.09	9.29
JIT AREA	0	0	0.00	0.00	0.00	0.00	0.00
SPRR TERMINAL	114,000	1,764,494	0.52	1.03	7.39	0.06	6.05
UP RAIL TERMINAL	71,750	1,112,300	0.33	0.65	4.66	0.04	3.81
MARINE TERMINAL AREAS	1,605,750	24,866,796	7.37	14.46	104.10	0.82	85.22
ON-SITE TRUCK TRIPS	147,250	273,885	0.90	3.36	4.33	0.19	1.37
BAY AREA TRUCK TRIPS	2,453,750	39,524,801	79.44	455.57	355.88	27.88	197.19
LONG DISTANCE TRUCK TRIPS	1,005,250	48,691,797	91.42	581.63	408.40	34.35	242.93
PORT OF RICHMOND TRUCKS	5,750	64,688	0.12	0.77	0.54	0.05	0.32
Autos	2,404,250	37,230,951	11.0	21.6	155.9	1.2	127.6
Trucks	3,612,000	88,555,170		1,041.3	769.2	62.5	441.8
Total	6,016,250	125,786,121	182.9	1,063.0	925.0	63.7	569.4

ROG = reactive organic compounds

N0x = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03~grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64~grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-23. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE A

Land Use or Trip Generation Category I	Trip Estimate Basis		Base Trip Vehicle Generation Generation Rate Rate	Vehicle eneration · Rate	Base Trip Vehicle P/A Trip Rate Splits Generation Generation	Splits r ractions	Base Trip Volume	* Productions Number of W Internal Internal Trip Destinations Productions	Number of Internal Trip Productions	Number of # Attractions ernal Trip W Internal roductions Origins	ttractions Number of Internal/ W Internal Internal Trip External Origins Attractions Trips	Internal/ External Trips	ernal/ Net :ernal Trips Adjusted Trips Generated Trip Rate	Adjusted Trip Rate	Trip Rate Adjusted Adjustment Trip Rate Factor
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	OVEES.	0.00	0.0	101	\$06	0	*0	0	8	0	0	0	0.0	10 0
FISCO AREAS 4 & 5	0 EMPLOYEES	LOYEES	0.00	0.0	10%	\$06	0	*0	0	**	0	0	0	0.0	0.0
JIT AREA	360 EMPLOYEES	LOYEES	3.50	9.0	101	\$06	1,260	10	0	*0	0	1,260	1,260	3.5	0.0
SPRR TERMINAL	0 EMPLOYEES	OYEES	0.00	0.0	101	\$ 06	0	*0	0	*0	0	0		0.0	0.0
UP RAIL TERMINAL	0 EMPL	EMPLOYEES	0.00	0.0	101	\$ 06	0	*0	0	*0	0	0	0	0.0	¥0.0
MARINE TERMINAL AREAS	2,853 EMPLOYEES	OYEES	3.50	9.0	101	3 06	9.986	10	•	*0	0	986.6	9,986	3.5	0.0
ON-SITE TRUCK TRIPS	729 AC	ACRES	8.12	0.0	20 \$	20 \$	5.916	* 0	0	*0	0	5,916	5,916	8.1	0.0
BAY AREA TRUCK TRIPS	729 AC	ACRES	14.84	0.0	¥05	20 \$	10,816	X 0	•	*0	0	10,816	10,816	14.8	0.0
LONG DISTANCE TRUCK TRIPS	729 AC	ACRES	6.08	0.0	20\$	202	4,431	*0	0	x 0	0	4,431	4,431	6.1	0.0%
									:		:	:	:		:
TOTALS							32,409		0		0	32,409	32,409		0.0

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Assoicates.

Average daily employee trip rate estimate provided by Jordan Woodman Dobson.

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-24. TRIP PURPOSE, TOM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE A

40.04 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 </th <th></th> <th></th> <th>Ę</th> <th>Percent</th> <th>Net</th> <th>TCM</th> <th>Adjusted</th> <th>Adjusted</th> <th>Overall</th> <th>Mean Trip</th> <th>Percent</th> <th>of Travel</th> <th>Percent of Travel Time by Speed (mph)</th> <th>(udw) p</th> <th></th>			Ę	Percent	Net	TCM	Adjusted	Adjusted	Overall	Mean Trip	Percent	of Travel	Percent of Travel Time by Speed (mph)	(udw) p	
*** *** **** *************************	Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	net Trip Rate		ica Effectiveness	(Minutes)	15	25	35	45	55
*** *** **** **** ********************				,											
Holitic Fig. 1		0 EMPLOYEES	Ŧ	40.0	0.0	*0	0.0	0		24.75	5.0	10.01	20.0%	25.0\$	40.0%
House Fig. 10 House Fi			H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0	25.0	15.0%	20.0
5 DEMONTES HAY 6001 01 01 0 0 0 0 0 0 0 0 0 0 0 0 0 0			н-0	5.0	0.0	*0	0.0	0		14.73	10.01	25.0	35.0\$	15.0\$	15.0\$
See The Properties			M-0	50.0\$	0.0	*0	0.0	0		21.70	5.0	20.0	20.0	20.0%	35.0\$
Figure 1 of the properties and the control of the c			0.0	5.0\$	0.0	X 0	0.0	0		15.93	10.0%	25.0%	35.0	15.0%	15.01
1. 1. 1. 1. 1. 1. 1. 1.	TO A CAPTA COST	21120	3	•	6	ż	ć	•		3		;	;	;	;
11.50 FMUNES	FISCO ANEXS 4 8 3	O ENTLOIRES	E :	5 6	9 6	5 8	0.0	-		c4.73	\$0.c	10.01	20.02	50.05 10.05	40.0
H-O 5.04 0.0 04 0.0 0 14.73 10.04 25.04 35.04 15.00 14.73 10.04 55.04 30.04 15.04 1			S.	0.0	0.0	*	0.0	0		12.50	10.0%	30.0	25.0%	15.0%	20.0%
0-M 56,0th 0.0 0th 0.0			o÷	5.0	0.0	*	0.0	•		14.73	10.01	25.0	35.0\$	15.0%	15.0%
360 BMPLOYEES			≯	\$0.0 \$	0.0	*0	0.0	0		21.70	5.0	20.0%	20.0%	20.0	35.0\$
360 EMPLOYEES H-W 40.01 1.4 0.01 1.4 504 50.7 5.04 5.07 10.01 25.01 25.01 10.0			0-0	5.0\$	0.0	*0	0.0	0		15.93	10.01	25.0	35.0\$	15.0\$	15.0\$
300 PMILOYEES H.M. 40.01 1.4 014 1.4 504 24.75 5.01 10.01 20.01 25.01 25.01 10.01 20.01 25.01 10.01 20.01 25.01 10.01 20.01 20.01 20.01 10.01 20.01 25.01 10.01 20.01 10.01 25.01 12.01 25															
H-5 0.04 0.0 04 0.0 0 0 12.50 10.0 12.50 10.0 30.0 12.50 10.0 12.5	JIT AREA	360 EMPLOYEES	Ŧ	40.0	1.4	*	1.4	504		24.75	5.0\$	10.0	20.0\$	25.0%	40.0
H-O 5.04 G.O. 1.8 G.O. 1.8 G.O. 2.1.70 G.O. 2.0.04 G.O			¥.S	0.0	0.0	*	0.0	0		12.50	10.01	30.0%	25.0	15.0	20.0%
0-M 50.04 1.8 0.04 0.2 0.1 1.8 630 21.70 5.04 20			H.O	5.0	0.2	*0	0.2	8		14.73	10.01	25.0	35.0\$	15.0	15.01
0.0 FOR FORM FINE BOLD FOR FOLIA FOR FOR FOR FOLIA FOR FOR FOR FOR FOR FOR FOR FOR FOR FOR			3 .0	\$0.0\$	1.8	**	1.8	630		21.70	5.0\$	20.0	20.0%	20.0%	35.0\$
0 EMPLOYEES H-M 40.01 0.0 <			0-0	5.0\$	0.2	*0	0.2	83		15.93	10.0	25.01	35.0\$	15.0\$	15.0%
0 EMPLOYEES H-W 40.0\$ 0.0 0\$ 0.0 0 0.0 0 0.0 0.0 0.0 0.0															
H-S 0.04 0.0 04 0.0 0 12.50 10.04 25.04 15.04 15.04 14.73 10.04 25.04 15.04 15.04 15.04 14.73 10.04 25.04 15.04 15.04 15.04 15.04 16.04 14.73 10.04 25.04 15.04 15.04 15.04 15.04 16	SPRR TERMINAL	0 EMPLOYEES	Ŧ	40.0%	0.0	*0	0.0	0		24.75	5.0	10.01	20.0%	25.0	40.0%
H-O 5.04 6.04 0.0 04 0.0 0 14.73 10.04 25.04 35.04 15.04 O-W 50.04 0.0 07 0.0 0 0 21.70 5.07 5.04 20.04 20.07 O-W 50.04 0.0 0 0 0 15.9 0.0 15.9 10.07 25.04 15.07 H-W 40.04 0.0 07 0.0 0 0 14.73 10.07 25.04 15.04 H-O 5.04 0.0 07 0.0 0 0 14.73 10.07 25.04 15.07 O-W 50.04 0.0 07 0.0 0 14.73 10.07 25.04 15.07 O-W 50.04 0.0 07 0.0 0 15.9 10.07 25.04 15.07 O-W 50.04 0.0 07 0.0 0 15.9 10.07 25.04 15.07 O-W 50.04 0.0 07 0.0 0 15.9 15.07 O-W 50.04 0.0 07 0.0 0 15.0 0 15.0 15.0 15.0 15.0 15.0 1			H-S	0.0	0.0	* 0	0.0	0		12.50	10.01	30.0	25.0\$	15.0\$	20.0\$
0-W 50.0% 0.0 0% 0.0 0 0.0 0.0 0.0 0.0 0.0 0.			о <u>.</u>	5.0%	0.0	*0	0.0	•		14.73	10.01	25.0	35.04	15.0	15.0%
0-0 5.04 6.04 0.0 0.0 0.0 0.0 0.0 0.0 15.93 10.04 25.04 35.04 15.02 0-10-10-10-10-10-10-10-10-10-10-10-10-10			≱ •0	\$0.0\$	0.0	**	0.0	0		21.70	5.0	20.0\$	20.0%	20.0%	35.0\$
0 EMPLOYEES H-W 40.0\$ 0.0 0 24.75 5.0\$ 10.0\$ 25.0\$ 25.0\$ H-S 0.0\$ 0.0 0 12.50 10.0\$ 25.0\$ 15.0\$ H-O 5.0\$ 0.0 0 14.73 10.0\$ 25.0\$ 15.0\$ 0-W 50.0\$ 0.0 0 0 15.93 10.0\$ 25.0\$ 15.0\$			0-0	5.0\$	0.0	*6	0.0	•		15.93	10.0	25.0\$	35.0\$	15.0%	15.0%
0 EMPLOYEES H-M 40.01 0.0 0 0.0 0 24.75 5.01 10.01 20.01 25.02 10.01 25.02 15.02 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>															
0.0% 0.0 0 0 12.50 10.0% 30.0% 25.0% 15.0% 5.0% 0.0 0 0 14.73 10.0% 25.0% 35.0% 15.0% 50.0% 0.0 0 0 0 0 0.0% 20.0% 20.0% 20.0% 5.0% 0.0 0 0 0 0 15.9% 10.0% 25.0% 25.0% 35.0% 15.0%	UP RAIL TERMINAL	0 EMPLOYEES	¥-H	40.0	0.0	80	0.0	0		24.75	5.0\$	10.01	. 20.0\$	25.0\$	40.0
5.04 0.0 0 14.73 10.04 25.04 35.04 15.04 50.04 0.0 0 0 21.70 5.04 20.04 20.04 20.04 5.04 0.0 0 0 0 0 15.93 10.04 25.04 35.04 15.04			H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0	25.0	15.0%	20.0\$
50.0\$ 0.0 0 0.0 0 0.0			H.O	5.0	0.0	*0	0.0	0		14.73	10.01	25.0\$	35.0\$	15.0%	15.0%
5.04 0.0 04 0.0 0 15.93 10.04 25.04 35.04 15.04			≱ -0	\$0.0\$	0.0	*	0.0	0		21.70	5.0\$	20.0\$	20.0%	20.0%	35.0\$
			0-0	5.0\$	0.0	*0	0.0	0		15.93	10.01	25.0	35.0%	15.0	15.0%

TABLE N.24. TRIP PURPOSE, TOM EFFECTS AND TRAVEL TIME DISAGREGATIONS, ALTERNATIVE A

		d.T.	Percent of Net	Net Trip	TCH	Adjusted	Adjusted	Overall	Mean Trip	Percent of Travel Time by Speed (mph)	of Travel T	Percent of Travel Time by Speed (mph)	(mph)	
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Trips E	Trips Effectiveness		15	25	35	45	55
MARINE TERMINAL AREAS	2,853 EMPLOYEES	H-W	40.0	1.4	*0	1.4	3,994		24.75	5.0\$	10.0%	20.0%	25.0	40.01
		H-S	0.0	0.0	**	0.0	0		12.50	10.01	30.0%	25.0\$	15.0%	20.0\$
		0-H	5.01	0.2	*	0.2	499		14.73	10.01	25.0\$	35.0\$	15.0\$	15.0\$
		M-0	50.0\$	1.8	*	1.8	4,993		21.70	5.0%	20.0\$	20.0%	20.0%	35.0\$
		0-0	5.0\$	0.2	*0	0.2	499		15.93	10.01	25.0\$	35.0	15.0\$	15.0\$
ON-SITE TRUCK TRIPS	729 ACRES	0-0	100.0%	8.1	*	8.1	5.916		6.20	75.0\$	20.0%	5.0\$	0.0	0.0
BAY AREA TRUCK TRIPS	729 ACRES	0-0	100.0%	14.8	*0	14.8	10,816		28.85	15.0\$	25.01	30.0\$	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	729 ACRES	0-0	100.0%	6.1	*0	6.1	4,431		77.50	10.01	20.0\$	25.0%	25.0\$	20.0\$
TOTALS							32,408	0.0%						

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

0-W = other-work trips

0-0 = other-other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-25. VEHICLE TRAVEL SUMMARY, ALTERNATIVE A

LAND USE	TRIP ESTIMATE BASIS	TRIP	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO ARFAS 1. 2. & 3	0 EMPLOYEES	A-H	c	24.8	17 04	•	42 5
i		· · · ·		12.5	7.40	o c	35.55
		0-Н	0	14.7	8.59	0	35.0
		M-0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.29	0	35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	∃.	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		0-н	0	14.7	8.59	0	35.0
		M -0	0	21.7	14.83	0	41.0
		0.0	0	15.9	9.29	0	35.0
JIT AREA	360 EMPLOYEES	3 *	504	24.8	17.94	9.044	43.5
		H-S	0	12.5	7.40	0	35.5
		0-н	63	14.7	8.59	541	35.0
		M-0	630	21.7	14.83	9,342	41.0
		0-0	63	15.9	9.59	585	35.0
SPRR TERMINAL	0 EMPLOYEES	ж- ж-	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		0-н	0	14.7	8.59	0	35.0
		™ -0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.29	0	35.0
UP RAIL TERMINAL	0 EMPLOYEES	Ξ.	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		0-н	0	14.7	8.59	0	35.0
		M-0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.59	0	35.0

TABLE N.25. VEHICLE TRAVEL SUMMARY, ALTERNATIVE A

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,853 EMPLOYEES	≯	3,994	24.8	17.94	71,667	43.5
		H-S	0	12.5	7.40	0	35.5
		О-Н	499	14.7	8.59	4,288	35.0
		M -0	4,993	21.7	14.83	74,038	41.0
		0-0	499	15.9	9.29	4,637	35.0
ON-SITE TRUCK TRIPS	729 ACRES	0-0	5,916	6.2	1.86	11,004	18.0
BAY AREA TRUCK TRIPS	729 ACRES	0-0	10,816	28.9	16.11	174,223	33.5
LONG DISTANCE TRUCK TRIPS	729 ACRES	0-0	4,431	77.5	48.44	214,627	37.5
					•		•
TOTALS:		M-H	4,498	24.8	17.94	80,711	43.5
		H-S	0	0.0	0.00	0	0.0
		H-0	562	14.8	8.59	4,829	34.9
		M-0	5,623	21.7	14.83	83,380	41.0
		0-0	21,725	32.3	18.65	405,076	34.7
			32,408	29.1	17.71	573,996	36.5

Notes:

: H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE N-26. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE A

# 1	one i	Trin Ectionto Racio	Trip	Average Distance	VMT by	Exhaust ROG Rate	Exhaust NOx Rate	Total PM10 Emission Rate	Summer CO Rate	Winter CO Rate	ROG Emissions	ROG NOX Emissions		PM10 Summer CO Winter CO Emissions Emissions Emissions Control	Winter CO Emissions
14.3 G PROTOTES					,										
Heighbored Heighbored	•5	0 EMPLOYEES	H-W	17.94	•	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
Fig. 656 10 6.29 0.53 0.11 13.9 5.13 0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			÷S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
5			H.0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
6.0 PRIONEES H.W 17.94 0.0 0.28 0.54 3.11 3.64 4.68 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			1 -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
Fig. 6 behatorers in the first of the first			0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
H4 6 6.59	FISCO AREAS 4 & 5	0 EMPLOYEES	¥	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
Hole 6.59 0 0.29 0.83 3.11 3.34 4.25 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			0-H	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
360 BPROVEES HW 17.94 9.044 0.26 0.54 3.11 3.61 4.68 0.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			3 -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
360 DMPLOYEES H-W 17.94 9,044 0.26 0.54 3.11 3.61 4.68 5.5 10.7 62.0 72.0 9.0 14. H.S. 7.40 0.28 0.28 0.55 3.11 3.84 4.25 5.13 10.8 64.0 68.8 0.0 9.29 5.42 0.23 0.52 3.11 3.34 4.25 5.13 10.8 64.0 68.8 0.0 9.29 5.85 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0 0.0 0.0 14.83 0.28 0.53 3.11 3.86 4.95 0.0 0.0 0.0 0.0 0.0 0.0 0.0 DMPLOYEES H-W 17.94 0 0.28 0.53 3.11 3.84 4.25 0.0 0.0 0.0 0.0 0.0 0.0 0.0 DMPLOYEES H-W 17.94 0 0.28 0.53 3.11 3.84 4.25 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
Harmonies Harm	,	of Price and a second	:	;				;	·			;		í	
H-3	OIL AKEA	300 EMPLUIEES		5 . 1	1 'h	67.0	f. 1	3.11	3.01	4.00	6 6) or .	0.20	U.2/	5.3
HO 8.59 541 0.29 0.53 3.11 3.97 5.13 0.4 0.6 3.7 4.7 4.7 C C C C C C C C C C C C C C C C C C C			÷	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
0-M 14.83 9,342 0.23 0.52 3.11 3.34 4.25 5.3 10.8 64.0 68.8 8 8 8 8 8 9.84			o ±	8.59	541	0.29	0.53	3.11	3.97	5.13	7 .0	9.0	3.7	4.7	6.1
0-0 9.29 585 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			™	14.83	9.342	0.23	0.52	3.11	3.34	4.25	5.3	10.8	64.0	68.8	87.5
0 EMPLOYEES H-M 17.94 0 0.26 0.54 3.11 3.61 4.68 0.0			0-0	9.29	582	0.21	0.47	3.11	2.94	3.61	0.3	9.0	4.0	3.8	4.7
HY 17.94 0 0.26 0.54 3.11 3.61 4.68 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.															
H-5 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	SPRR TERMINAL	0 EMPLOYEES	33 ±	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
H-O 8.59 0 0.29 0.53 3.11 3.34 4.25 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			¥.S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
O-W 14.83 0 0.23 0.62 3.11 3.34 4.25 0.0 0.0 0.0 0.0 0.0 O-O- 9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0 0.0 H-A 17.94 0 0.26 0.54 3.11 3.61 4.68 0.0 0.0 0.0 0.0 H-B 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 0.0 H-O 8.59 0 0.23 0.53 3.11 3.97 5.13 0.0 0.0 0.0 0.0 O-W 14.83 0 0.23 0.52 3.11 3.34 4.25 0.0 0.0 0.0 0.0 O-W 9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0 0.0			0 ±	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
C EMPLOYEES H-M 17.94 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0 0.0 H-S 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0			74-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
0 EMPLOYEES H-M 17.94 0 0.26 0.54 3.11 3.61 4.68 0.0 0.0 0.0 0.0 H-S 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0		•	0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
0 EMPLOYEES H-M 17.94 0 0.26 0.54 3.11 3.61 4.68 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.															
7.40 0 0.28 0.55 3.11 3.86 4.95 0.0	UP RAIL TERMINAL	0 EMPLOYEES	÷	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
8.59 0 0.29 0.53 3.11 3.97 5.13 0.0			H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
14.83 0 0.23 0.52 3.11 3.34 4.25 0.0 0.			0-H	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0 0.0			1 -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
			0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE N-26. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE A

Land Use	Trip Estimate Basis	Trip Purpose	Average Trip Distance pose (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOX Emissions (lbs/day)	PM10 Emissions (1bs/day)	ROG NOX PMIO Summer CO Winter CO Emissions Emissions Emissions (lbs/day) (lbs/day) (lbs/day) (lbs/day)	Winter CO Emissions (1bs/day)
MARINE TERMINAL AREAS	2,853 EMPLOYEES	±	17.94	71,667	0.26	0.54	3.11	3.61	4.68	43.8	84.6	491.2	570.3	739.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0			0.0
		н-0	8.59	4,288	0.29	0.53	3.11	3.97	5.13	3.2	5.0	29.4	37.5	48.5
		≯	14.83	74,038	0.23	0.52	3.11	3.34	4.25	42.2	85.3	507.5	545.2	693.5
		0-0	9.29	4,637	0.21	0.47	3.11	2.94	3.61	2.5	4.9	31.8	30.1	36.9
OM-SITE TRUCK TRIPS	729 ACRES	0.0	1.86	11,004	2.97	11.14	4.53	14.32	14.42	72.5	270.4	109.8	347.4	349.8
BAY AREA TRUCK TRIPS	729 ACRES	0-0	16.11	174,223	1.82	10.46	4.53	8.15	8.21	700.3	4,016.3	1,738.4	3,130.2	3,151.9
LONG DISTANCE TRUCK TRIPS	os 729 ACRES	0-0	48.44	214,627	1.67	10.84	4.53	7.59	7.64	805.9	5,127.5	2,141.6	3,591.9	3,617.2
TOTALS			17.71	573,996						1,681.9	9,616.6	5,183.4	8,401.7	8,828.4

ROG - reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions

used to compute average trip lengths.

TABLE N-27. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE A AND EMISSION RATES FOR 2010

		Net D Trip	let Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions		Average Daily Exhaust Plus Entrained PM10 Emissions	Average Daily Traffic- Related Carbon Monoxide Emissions	/ Traffic- Nonoxide IS
:	Amount of	Internal	External	Total	Daily VMT		ġ	spunod)		
Land Use	Development	Irıps	ırıps	ırıps	Estimate	KUG	NON	per day)	Summer	Winter
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
JIT AREA	360 EMPLOYEES	0	1,260	1,260	19,512	11.6	22.7	133.7	149.3	191.5
SPRR TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
MARINE TERMINAL AREAS	2,853 EMPLOYEES	0	9,985	9.985	154,630	91.7	179.8	1,059.9	1,183.0	1,518.0
ON-SITE TRUCK TRIPS	729 ACRES	5,916	0	5,916	11.004	72.5	270.4	109.8	347.4	349.8
BAY AREA TRUCK TRIPS	729 ACRES	0	10,816	10,816	174.223	700.3	4.016.3	1,738.4	3,130.2	3,151.9
LONG DISTANCE TRUCK TRIPS	729 ACRES	0	4,431	4,431	214,627	805.9	5,127.5	2,141.6	3,591.9	3,617.2
			:							
Auto Trips:		0	11,245	11,245	174.142	103.3	202.5	1,193.7	1,332.2	1,709.5
Truck Trips:		5,916	15.247	21,163	399,854	1.578.7	9,414.1	3,989.8	7,069.5	7,118.9
Total		5,916	26,492	32,408	573,996	1.681.9	9,616.6	5,183.4	8,401.7	8,828.4

ROG = reactive organic compounds NOx = nitrogen oxides PM10 = inhalable particulate matter Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-28. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE A

	Annual Vehicle				nnual Vehio (ear) For /		
Land Use	Trips	Annual VMT	ROG	NO _X	со	S0x	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	315,000	4,878,064	1.45	2.84	20.42	0.16	16.72
SPRR TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,496,250	38,657,455	11.46	22.48	161.83	1.28	132.49
ON-SITE TRUCK TRIPS	1,479,000	2,750,940	9.06	33.80	43.52	1.94	13.72
BAY AREA TRUCK TRIPS	2,704,000	43,555,807	87.54	502.03	392.18	30.73	217.30
LONG DISTANCE TRUCK TRIPS	1,107,750	53,656,641	100.74	640.94	450.04	37.85	267.70
	••••••	***********	•••••		******	• • • • • • •	
Autos	2,811,250	43,535,519	12.9	25.3	182.2	1.4	149.2
Trucks	5,290,750	99,963,387	197.3	1,176.8	885.7	70.5	498.7
Total	8,102,000	143,498,906	210.2	1,202.1	1,068.0	72.0	647.9

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-29. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE B

Land Use or Trip Generation Category	Trip Esti	Trip Estimate Basis		Base Trip Vehicle eneration Generation Rate Rate	le P/A	Base Trip Vehicle P/A Trip Rate Splits Generation Generation	plits ctions	Base Trip Volume	# Productions Number of Base Trip W Internal Internal Trip Volume Destinations Productions	Number of Internal Trip Productions	Number of & Attractions ernal Trip W Internal roductions Origins	ttractions Number of Internal/ W Internal Internal Trip External Origins Attractions Trips	Internal/ External Trips	Net Trips Generated	ernal/ Net Trip Rate ternal Trips Adjusted Adjustment Trips Generated Trip Rate Factor	Trip Rate Adjustment Factor
FISCO AREAS 1, 2, & 3	400	400 EMPLOYEES	3.50		9.0	101	\$06	1,400	*0	0	*0	0	1,400	1.400	3.5	0.0
FISCO AREAS 4 & 5	0	EMPLOYEES	0.00	.0	ò	101	\$06	0	*0	0	*0	0	0	0	0.0	0.0
JIT AREA	167	167 EMPLOYEES	3.50		9.6	101	\$06	585	*0	0	\$ 0	0	585	585	3.5	0.0
SPRR TERMINAL	150	EMPLOYEES	3.50		9.6	101	\$ 06	222	*0	0	**	0	525	525	3.5	0.0
UP RAIL TERMINAL	29	EMPLOYEES	3.50		9.0	101	\$06	235	* 0	0	*0	•	235	235	3.5	0.0
MARINE TERMINAL AREAS	2,312	2,312 EMPLOYEES	3.50		9.0	101	\$ 06	8.092	*0	0	*0	0	8,092	8,092	3.5	0.0
ON-SITE TRUCK TRIPS	591	ACRES	3.91		0.0	50\$	203	2,313	**	•	*0	0	2,313	2,313	3.9	0.0
BAY AREA TRUCK TRIPS	591	ACRES	18.30		0.0	20\$	204	10,817	**	0	*0	0	10,817	10,817	18.3	0.0
LONG DISTANCE TRUCK TRIPS	5 591	ACRES	7.50		0.0	20\$	202	4,432	**	0	**	0	4,432	4,432	7.5	0.0
												:				:
TOTALS								28,399		0		0	28,399	28,399		0.0

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Assoicates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-30. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE B

FINAL PARTICIPATION FORTING				Percent	Net	Ð	Adjusted	Adjusted	Overall	Mean Trip	Percent	of Travel	Fine by Sape	d (mub)	
1. 1. 1. 1. 1. 1. 1. 1.			Trtp	of Net	Trip	Program	Net	Net	Đ	Duration					
1. S	Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate		ectiveness	(Minutes)	15	52	38	45	35
1. 6. 1															
1-1	2, &	400 EMPLOYEES	#-H	40.0%	1.4	**	1.4	260		24.75	5.0	10.0	20.0\$	25.0	40.0%
1.00 1.00			÷	0.0	0.0	* 0	0.0	0		12.50	10.01	30.0%	25.0\$	15.0%	20.01
5 DEMONTES HAM 60.01 1.8 01 1.8 770 5.77 5.07 5.01 5.01 5.01 5.01 15.01			o ÷	5.0	0.2	*	0.2	70		14.73	10.0	25.0%	35.0%	15.0	15.02
5 Demontres 14 40.04 0.04 0.0			≱ ∙0	50.0\$	1.8	*0	1.8	700		21.70	5.0	20.0\$	20.0%	20.0\$	35.01
1- 1- 1- 1- 1- 1- 1- 1-			0-0	5.0\$	0.5	* 0	0.2	70		15.93	10.0%	25.0\$	35.0\$	15.0%	15.0\$
HS 0.04 0.0 01 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FISCO AREAS 4 & 5	O EMPLOYEES	÷	40.0\$	0.0	**	0.0	0		24.75	5.0\$	10.0	20 02	* *	40 04
H-O 5.01 0.0 01 0.0 0 0 14.73 10.01 25.01 35.01 15.01 O-M 5.01 0.0 01 0.0 0 0 15.01 167 PHONTES H-W 40.01 1.4 0.0 01 1.4 234 24.75 5.01 20.01 25.01 35.01 15.01 150 PHONTES H-W 40.01 1.4 0.0 01 1.4 234 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.0 01 1.4 234 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.0 01 1.4 234 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.1 0.2 29 14.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.1 0.2 25 25 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.1 0.2 25 25 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.1 0.2 25 25 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.1 0.2 25 25 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.1 0.2 25 25 24.75 5.01 10.01 25.01 15.01 150 PHONTES H-W 40.01 1.4 0.1 0.2 25 25 25 25 25 25 25 25 25 25 25 25 25			H∙S	0.0	0.0	*	0.0	0		12.50	10.0	30.0\$	25.0\$	15.02	5 6
0-4 50.04 0.0 04 0.0 0 0 0 15.9 0 15.9 0 15.9 0 15.0 0 15.			0 #	5.0%	0.0	*	0.0	0		14.73	10.0%	25.0\$	35.0\$	15.0%	15.02
167 BMLOYTES			3	50.0	0.0	*0	0.0	0		21.70	5.0%	20.0%	20.0%	20.0\$	35.0
167 DPHLOYEES			0-0	5.04	0.0	**	0.0	•		15.93	10.01	25.0\$	35.04	15.0\$	15.0
H-5 6.04 0.0 04 0.0 0 0.0 12.50 10.04 30.04 50.04 50.04 10.0	JIT AREA	167 EMPLOYEES	ž	40.0\$	1.4	8	1.4	234		24.75	5.07	10 01	20 03	90 06	ş
H-0 5.01 0.2 01 0.2 01 0.2 293 14,73 10.01 25.01 25.01 20.01 10.01			H-S	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0	25.02	15.03	\$0.0 \$
150 EMPLOYEES H-W 40.08 1.4 0.2 2.9 21.70 5.08 20.08			H-0	5.0\$	0.2	8	0.2	53		14.73	10.01	25.0\$	35.0\$	15.0	15.02
6-0 5.04 40.07 1.4 0t 1.4 210 24.75 5.04 10.04 25.04 1			≭	20.0\$	1.8	*	1.8	293		21.70	5.0	20.0\$	20.0%	20.02	
150 EMPLOYEES H-W 40.01 1.4 01 1.4 210 24.75 5.01 10.01 25.01 25.01 15.01 14.73 10.01 24.75 5.01 15.01 15.01 15.01 15.01 14.73 10.01 25.01 15.01			0-0	5.0\$	0.2	*0	0.2	53		15.93	10.01	25.0\$	35.0	15.0\$	15.0\$
H-S 0.04 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	SPRR TERMINAL	150 EMPLOYEES	Ŧ	40.0%	1.4	**	1.4	210		24.75		1 0 01	\$	*0	4
H-O 5.04 0.2 04 0.2 26 14.73 10.04 25.04 35.04 15.04 O-M 50.04 1.8 02 263 21.70 5.04 20.04 20.04 20.04 O-M 50.04 1.8 02 26 25 26 20.04 2			H-S	0.0	0.0	*0	0.0	0		12.50	10.0%	30.0	32 23	15.02	* · · · · · · · · · · · · · · · · · · ·
67 EMPLOYEES H-W 50.04 1.8 04 1.8 263 21.70 5.04 20.03 20.04 20.04 67 EMPLOYEES H-W 40.04 1.4 0.2 0.2 26 15.93 10.04 25.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 20.04 25.04 15.04			0 .	5.04	0.2	*0	0.2	56		14.73	10.01	25.0\$	35.0\$	15.02	15.02
67 EMPLOYEES H-W 40.0t 1.4 0t 1.4 94 24.75 5.0t 10.0t 25.0t 15.0t H-S 0.0t 0.0 0t 0.0 0 12.50 10.0t 25.0t 15.0t H-O-W 5.0t 0.2 0t 0.2 12 14.73 10.0t 25.0t 15.0t 15.0t 0.0t 0.0 0 0 1.0 0.0 12.50 10.0t 25.0t 15.0t 15.0t 0.0W 1.8 0.2 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8			3 .0	20.0\$	1.8	* 0	1.8	263		21.70	5.0	20.0%	20.0\$	20.0%	35.04
67 EMPLOYEES H-W 40.0\$ 1.4 0\$ 1.4 94 24.75 5.0\$ 10.0\$ 25.0\$ 25.0\$ 15.0\$			0-0	5.0\$	0.2	X 0	0.5	56		15.93	10.01	25.0%	35.0\$	15.0\$	15.0\$
0.0\$ 0 0 12.50 10.0\$ 25.0\$ 25.0\$ 25.0\$ 15.0\$ 5.0\$ 0.2 12 14.73 10.0\$ 25.0\$ 15.0\$ 15.0\$ 50.0\$ 1.8 1.8 118 21.70 5.0\$ 20.0\$ 20.0\$ 20.0\$ 5.0\$ 0.2 0.2 12 15.93 10.0\$ 25.0\$ 35.0\$ 15.0\$	up rail terminal	67 EMPLOYEES	¥	40.0\$	1.4	8	1.4	86		24.75	20 5	10 01	40 UC :	•	
5.04 0.2 0.2 12 14.73 10.04 25.04 35.04 15.04 50.04 1.8 0.2 1.8 118 21.70 5.04 20.04 20.03 20.04 5.04 0.2 0.2 12 15.93 10.04 25.04 35.04 15.04			₩.S	0.0	0.0	*	0.0	0		12.50	10.0%	30.0%	32.05	15.03	1 0.00
50.0t 1.8 0\$ 1.8 118 21.70 5.0t 20.0t 20.0t 20.0t 5.0t 0.2 0.2 12 15.93 10.0t 25.0t 35.0t 15.0t			Н-0	5.0	0.2	*0	0.2	12		14.73	10.02	75.02	, to	15.04	5 2
5.0\$ 0.2 0\$ 0.2 12 15.93 10.0\$ 25.0\$ 35.0\$ 15.0\$			# -0	50.0\$	1.8	*	1.8	118		21.70	5.0%	20.0	5 2	20.04	15.04 35.04
			0-0	5.0\$	0.2	* 0	0.2	12		15.93	10.0	25.0\$	35.04	15.0\$	15.0

TABLE N-30. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE B

		Trib	Percent of Net	Net	TCM	Adjusted	Adjusted	Overal 3	Hean Trip	Percent	Percent of Travel Time by Speed (mph)	ine by Spee	d (mph)	
Land Use	irip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Trips E	Trips Effectiveness	_	15 25 35 45	25	35	:	
MARINE TERMINAL AREAS	2,312 EMPLOYEES	ž	40.0	1.4	*0	1.4	3,237		24.75	5.0\$	10.01	20.0%	25.0\$	40.0\$
		÷S	0.0	0.0	**	0.0	0		12.50	10.01	30.0\$	25.0\$	15.0%	20.0\$
		₩.	5.0\$	0.2	1 0	0.2	405		14.73	10.01	25.0\$	35.01	15.0%	15.0
		∦ -0	\$0.0\$	1.8	*0	1.8	4.046		21.70	5.0\$	20.0%	20.0\$	20.0\$	35.0\$
		0-0	5.0	0.2	*	0.2	405		15.93	10.01	25.0\$	35.0\$	15.0\$	15.0\$
ON-SITE TRUCK TRIPS	591 ACRES	0-0	100.0%	3.9	**	3.9	2,313		6.20	75.0%	20.0%	5.04	0.0	0.0
BAY AREA TRUCK TRIPS	591 ACRES	0-0	100.01	18.3	**	18.3	10.817		28.85	15.01	25.01	30.0%	20.0\$	10.0%
LOMG DISTANCE TRUCK TRIPS	S 591 ACRES	0-0	100.0%	7.5	*	7.5	4,432		77.50	10.01	20.0%	25.0\$	25.01	20.0%
TOTALS							28,401	0.0						

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

0-W = other-work trips

0.0 = other-other trips

TCM - transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-31. VEHICLE TRAVEL SUMMARY, ALTERNATIVE B

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	3 ±	260	24.8	17.94	10,049	43.5
		¥.S	0	12.5	7.40	0	35.5
		0- Н	70	14.7	8.59	601	35.0
		M-0	200	21.7	14.83	10,380	41.0
		0-0	70	15.9	9.29	650	35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	3 . ∓	0	24.8	17.94	c	43 5
		H-S	0	12.5	7.40	0	35.5
		0-н	0	14.7	8.59	0	35.0
		M -0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.59	0	35.0
JIT AREA	167 EMPLOYEES	≯ -±	234	24.8	17.94	4, 199	43 5
		H-S	0	12.5	7.40	0	35.5
		Н-0	53	14.7	8.59	249	35.0
		м-0	293	21.7	14.83	4,345	41.0
		0-0	53	15.9	9.29	269	35.0
SPRR TERMINAL	150 EMPLOYEES	X -H	210	24.8	17.94	3,768	43 5
		H-S	0	12.5	7.40	0	35.5
		0-Н	26	14.7	8.59	223	35.0
		M -0	263	21.7	14.83	3,900	41.0
		0-0	56	15.9	9.29	242	35.0
UP RAIL TERMINAL	67 EMPLOYEES	3. H	94	24.8	17.94	1,687	43.5
		H-S	0	12.5	7.40	0	35.5
		Н-0	12	14.7	8.59	103	35.0
		M-0	118	21.7	14.83	1,750	41.0
		0-0	12	15.9	9.29	112	35.0

TABLE N-31. VEHICLE TRAVEL SUMMARY, ALTERNATIVE B

LAND USE	TRIP ESTIMATE BASIS	TRIP	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,312 EMPLOYEES	м-н О-н О-н	3,237 0 405	24.8 12.5 14.7	17.94 7.40 8.59	58,084 0 3,480	43.5 35.5 35.0
		M-0 0-0	4,046 405	21.7 15.9	14.83 9.29	59,995 3,763	41.0 35.0
ON-SITE TRUCK TRIPS	591 ACRES	0.0	2,313	6.2	1.86	4,305	18.0
BAY AREA TRUCK TRIPS	591 ACRES	0-0	10,817	28.9	16.11	174,239	33.5
LONG DISTANCE TRUCK TRIPS	591 ACRES	0-0	4,432	77.5	48.44	214,675	37.5
TOTALS:		. 3-±	4,335	24.8	17.94	77	43.5
		H-S	0	0.0	0.00	0	0.0
		0-н	542	14.8	8.59	4,657	34.9
		M-0	5,420	21.7	14.83	80,370	41.0
		0-0	18,104	37.5	22.00	398,253	35.2
			28,401	32.1	19.76	561,066	36.9

Notes:

H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
WMT = vehicle miles traveled

TABLE N-32. SUMMARY OF WHT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE B

		Trip	Average Distance	WMT by	Exhaust ROG Rate	Exhaust NOx Rate	Total PM10 Emission Rate	Sumer CO Rate	Winter CO Rate	ROG Emissions	NOX Entssions	PM10 Emissions	Summer CO	Winter CO
Land Use	Trip Estimate Basis	Purpose	(miles)	Category	(gm/mfle)	(gm/mile)	(gm/mile)	(gm/mile)	(gm/m1le)	(lbs/day)	(1bs/day)			
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	¥	17.94	10,049	0.26	0.54	3.11	3.61	4.68	6.1	11.9	6.89	80.0	103.6
		H·S	7.40	•	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0÷	8.59	601	0.29	0.53	3.11	3.97	5.13	9.4	0.7	4.1	5.3	6.8
		74 O	14.83	10,380	0.23	0.52	3.11	3.34	4.25	5.9	12.0	71.1	76.4	97.2
		0-0	9.29	650	0.21	0.47	3.11	2.94	3.61	0.4	0.7	4.5	4.2	5.2
FISCO AREAS 4 & 5	0 EMPLOYEES	÷	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		1 -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	•	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	167 EMPLOYEES	A-H	17.94	4,199	0.26	0.54	3.11	3.61	4.68	2.6	5.0	28.8	33.4	43.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0-±	8.59	249	0.29	0.53	3.11	3.97	5.13	0.2	0.3	1.7	2.2	2.8
		™ .0	14.83	4,345	0.23	0.52	3.11	3.34	4.25	2.5	5.0	29.8	32.0	40.7
		0-0	9.29	569	0.21	0.47	3.11	2.94	3.61	0.1	0.3	1.8	1.7	2.1
SPRR TERMINAL	150 EMPLOYEES	ž	17.94	3,768	0.26	0.54	3.11	3.61	4.68	2.3	4.4	25.8	30.0	38.9
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	223	0.29	0.53	3.11	3.97	5.13	0.2	0.3	1.5	2.0	2.5
		3 -0	14.83	3,900	0.23	0.52	3.11	3.34	4.25	2.2	4.5	26.7	28.7	36.5
		0-0	9.29	242	0.21	0.47	3.11	2.94	3.61	0.1	0.3	1.7	1.6	1.9
UP RAIL TERMINAL	67 EMPLOYEES	¥-H	17.94	1,687	0.26	0.54	3.11	3.61	4.68	1.0	2.0	. 11.6	13.4	17.4
		H∙S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H.0	8.59	103	0.29	0.53	3.11	3.97	5.13	0.1	0.1	0.7	0.9	1.2
		3 •	14.83	1,750	0.23	0.52	3.11	3.34	4.25	1.0	2.0	12.0	12.9	16.4
		0-0	9.29	112	0.21	0.47	3.11	2.94	3.61	0.1	0.1	9.0	0.7	6.0

TABLE N.32. SUMMARY OF VHT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE B

Land Use	Trip Estimate Basis	Tr1p Purpose	Average Trip Distance pose (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate E (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (1bs/day)	PM10 Emissions (1bs/day)	ROG NOx PHIO Summer CO Winter CO Emissions Emissions Emissions Emissions (1bs/day) (1bs/day) (1bs/day) (1bs/day)	Winter CO Emissions (1bs/day)
MARINE TERMINAL AREAS	2,312 EMPLOYEES	H-K	17.94	58,084	0.26	0.54	3.11	3.61	4.68	35.5	9.89	398.1	462.2	598.9
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0. H	8.59	3,480	0.29	0.53	3.11	3.97	5.13	5.6	4.0	23.9	30.4	39.4
		≯	14.83	59,995	0.23	0.52	3.11	3.34	4.25	34.2	69.2	411.2	441.8	562.0
		0-0	9.29	3,763	0.21	0.47	3.11	2.94	3.61	2.1	3.9	25.8	24.4	30.0
OM-SITE TRUCK TRIPS	591 ACRES	0-0	1.86	4,302	2.97	11.14	4.53	14.32	14.42	28.3	105.7	42.9	135.8	136.7
BAY AREA TRUCK TRIPS	591 ACRES	0-0	16.11	174,239	1.82	10.46	4.53	8.15	8.21	700.4	4,016.6	1,738.6	3,130.5	3,152.2
LONG DISTANCE TRUCK TRIPS	591 ACRES	0.0	48.44	214,675	1.67	10.84	4.53	7.59	7.64	806.1	5,128.7	2,142.1	3,592.7	3,618.1
TOTALS			19.76	561,066						1,634.3	9,446.2	5,074.1	8,143.1	8,554.7

ROG = reactive organic compounds

NOx - nitrogen oxides

PM10 - inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions

used to compute average trip lengths.

TABLE N-33. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE B AND EMISSION RATES FOR 2010

·			Net Daily Vehicle Trip Generation	a		Average Summer Day Traffic-Related Ozone Precursor Emissions		Average Daily Exhaust Plus Entrained	Average Daily Traffic- Related Carbon Monoxide Emissions	y Traffic. n Monoxide ns
	Amount of	Internal	External	Total	Daily WAT	(pounds per day)		PM10 Emissions	(pounds per day)	r day)
Land Use	Development	Trips	Trips	Trips	Estimate	R0G	NOX	(pounds per day)	Summer	Winter
FISCO AREAS 1: 2. & 3	400 EMPLOYEES	c	1.400	1 400	21 680	12 0	25.2	140 £	0 371	6
FISCO AREAS 4 & 5	0 EMPLOYEES		0	0	0	0.0	0.0	0.0	0.0	0.0
JIT AREA	167 EMPLOYEES	0	585	585	9.062	5.4	10.5	62.1	69.3	0.68
SPRR TERMINAL	150 EMPLOYEES	0	525	525	8,133	4.8	9.5	55.7	62.2	79.8
UP RAIL TERMINAL	67 EMPLOYEES	0	236	236	3,651	2.2	4.2	25.0	27.9	35.8
MARINE TERMINAL AREAS	2,312 EMPLOYEES	0	8,093	8,093	125,323	74.3	145.7	859.0	958.8	1,230.3
ON-SITE TRUCK TRIPS	591 ACRES	2,313	0	2,313	4,302	28.3	105.7	42.9	135.8	136.7
BAY AREA TRUCK TRIPS	591 ACRES	0	10,817	10,817	174,239	700.4	4.016.6	1,738.6	3,130.5	3,152.2
LONG DISTANCE TRUCK TRIPS	591 ACRES	0	4.432	4,432	214,675	806.1	5,128.7	2,142.1	3,592.7	3,618.1
				:		:				
Auto Trips:		0	10,839	10,839	167,849	99.5	195.2	1,150.5	1,284.1	1,647.7
Truck Trips:		2,313	15,249	17,562	393,217	1,534.8	9,251.0	3,923.6	6,859.0	6,907.0
Total		2,313	26,088	28,401	561,066	1,634.3	9,446.2	5.074.1	8,143.1	8,554.7

ROG = reactive organic compounds

NOx = nitrogen oxides PM10 = inhalable particulate matter Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-34. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE B

	Annual Vehicle				nual Vehic 'ear) For A		
Land Use	Trips	Annual VMT	ROG	NO _×	CO	S0x	PM10
FISCO AREAS 1, 2, & 3	350,000	5,420,071	1.61	3.15	22.69	0.18	18.58
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	146,250	2,265,551	0.67	1.32	9.48	0.07	7.76
SPRR TERMINAL	131,250	2,033,262	0.60	1.18	8.51	0.07	6.97
UP RAIL TERMINAL	59,000	912,769	0.27	0.53	3.82	0.03	3.13
MARINE TERMINAL AREAS	2,023,250	31,330,695	9.29	18.22	131.16	1.04	107.38
ON-SITE TRUCK TRIPS	578,250	1,075,545	3.54	13.21	17.02	0.76	5.37
BAY AREA TRUCK TRIPS	2,704,250	43,559,834	87.55	502.08	392.21	30.73	217.32
LONG DISTANCE TRUCK TRIPS	1,108,000	53,668,750	100.76	641.08	450.14	37.86	267.76
			•••••			•••••	
Autos	2,709,750	41,962,348	12.4	24.4	175.7	1.4	143.8
Trucks	4,390,500	98,304,129	191.8	1,156.4	859.4	69.4	490.4
Total	7,100,250	140,266,477	204.3	1,180.8	1.035.0	70.7	634.3

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-35. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE C

Land Use or Trip Generation Category	Trip Estimate Basis		Base Trip Vehicle keneration Generation Rate Rate	le P/A on te Produ	Base Trip Vehicle P/A Trip Rate Splits Generation Generation		8 Base Trip Volume		Productions Number of W Internal Internal Trip estinations Productions	Number of & Attractions ernal Trip W Internal roductions Origins	ttractions Number of Internal/ W Internal Internal Trip External Origins Attractions Trips	Number of Internal/ arnal Trip External tractions Trips	ernal/ Net cernal Trips Adjusted Trips Generated Trip Rate	Trip Rate Adjusted Adjustment Trip Rate Factor	Trip Rate Adjustment Factor
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	ES 0.00	00 0.	0.	101	\$06	0	X 0	0	*0	•	0	0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	ES 0.00		0.0	10\$	\$06	0	8	0	*0	0	0	0	0.0	0.0
JIT AREA	208 EMPLOYEES	ES 3.50		9.0	101	106	728	*0	0	*0	0	728	728	3.5	0.0
SPRR TERMINAL	210 EMPLOYEES	ES 3.50		9.0	101	\$06	735	0	0	10	0	735	735	3.5	0.0
UP RAIL TERMINAL	0 EMPLOYEES	ES 0.00		0.0	101	\$06	•	*0	0	*0	0	0	0	0.0	0.0
MARINE TERMINAL AREAS	2,970 EMPLOYEES	ES 3.50		9.6	101	\$ 06	10,395	*0	0	*0	0	10,395	10,395	3.5	0.0
ON-SITE TRUCK TRIPS	759 ACRES	8.82	0.0	0,	203	20 \$	6,694	**	0	X 0	0	6,694	6,694	8.8	0.0
BAY AREA TRUCK TRIPS	759 ACRES	14.25		0.0	204	204	10,819	*0	0	X 0	0	10,819	10,819	14.3	0.0
LONG DISTANCE TRUCK TRIPS	759 ACRES	5.84	0.0	0.	20%	50\$	4,433	*0	0	*0	0	4,433	4,433	5.8	0.0
						:					:	:			:
TOTALS							33,804		0		0	33,804	33,804		0.0

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Assoicates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area. terminals and 84% of peak week trips for rail terminals.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-36. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISMGGREGATIONS, ALTERNATIVE C

		Trip	Percent of Net	Trip	TCM Program	Adjusted Net	Adjusted Net	Overal1 TCM	Mean Trip Duration	Percent	of Travel	Percent of Travel Time by Speed (mph)	ed (mph)	
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Trips	Effectiveness	(Minutes)	15	22	35	45	52
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	æ ±	40.04	0.0	ö	0.0	0		24 75	بر ج	10 01	000	.	•
		H-S	0.0	0.0	*0	0.0	•		12.50	10.01	30.0%	25.0%	15.0	20.02
		Н-0	5.0	0.0	**	0.0	0		14.73	10.01	25.0\$	35.0	15.0	15.0\$
		7-0	50.0\$	0.0	*0	0.0	0		21.70	5.0\$	20.0	20.0%	20.0	35.0\$
		0-0	5.0	0.0	*	0.0	0		15.93	10.0	25.0	35.0\$	15.0\$	15.0
FISCO AREAS 4 & 5	0 EMPLOYEES	÷	40.0\$	0.0	*0	0.0	0		24.75	5.01	10.01	20.0%	25.0\$	40.0%
		H·S	0.0	0.0	*0	0.0	•		12.50	10.01	30.0	25.0%	15.0	20.0%
		H-0	5.0\$	0.0	*0	0.0	0		14.73	10.0	25.0\$	35.0%	15.0%	15.0
		M-0	20.0	0.0	**	0.0	0		21.70	5.0	20.0\$	20.0\$	20.0\$	35.0\$
		0-0	5.0	0.0	* 0	0.0	0		15.93	10.0	25.0\$	35.04	15.0\$	15.0
JIT AREA	208 EMPLOYEES	≇ ±	40.0%	1.4	*0	1.4	291		24.75	5.0	10.01	20.0\$	25.0%	40.0
		H-S	0.0	0.0	**	0.0	0		12.50	10.01	30.0\$	25.0%	15.0\$	20.03
		¥.0	5.0\$	0.2	* 0	0.2	36		14.73	10.01	25.0%	35.0%	15.01	15.0
		7. O	50.0	1.8	*0	1.8	364		21.70	5.0\$	20.0%	20.0%	20.0%	35.0
		0-0	5.0%	0.2	*0	0.2	36		15.93	10.01	25.0\$	35.0\$	15.0%	15.0
SPRR TERMINAL	210 FMPI OVEFS	3	40 0¥		ŧ		700		ì	i	;	;	;	;
		: ÷	0.0	0.0	8 8	0.0	5 -		12.50	9.0°	30.05	20.03 27 04	25.03	20.04
		н-0	5.0\$	0.2	8	0.2	37		14.73	10.0	25.0\$	35.0	15.0%	15.03
		М-0	50.0\$	1.8	*	1.8	368		21.70	5.0	20.0%	20.0\$	20.0%	35.0
		0-0	5.0\$	0.2	*0	0.2	37		15.93	10.01	25.03	35.0\$	15.0\$	15.0
UP RAIL TERMINAL	0 EMPLOYEES	¥	40.01	0.0	*0	0.0	0		24.75	5.0%	10.01	. 20.0	25.01	40 04
		H-S	0.0	0.0	*0	0.0	0		12.50	10.0	30.0\$	25.0\$	15.0%	20.0\$
		0÷	5.0	0.0	*0	0.0	0		14.73	10.01	25.0\$	35.0%	15.0%	15.0\$
		1 •0	50.0\$	0.0	**	0.0	0		21.70	5.0\$	20.0%	20.0	20.0\$	35.0
		0-0	5.0	0.0	*	0.0	0		15.93	10.01	25.0\$	35.0\$	15.0	15.0\$

TABLE N.36. TRIP PURPOSE, TOM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE C

		Trio	Percent of Net	Net	TCM	Adjusted	Adjusted	Overall	Mean Trip		Percent of Travel Time by Speed (mph)	Fine by Spee	d (mph)	
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	Trip Rate	Trips	Trips Effectiveness	(Minutes)	15	52	35 45	45	83
MARINE TERMINAL AREAS	2,970 EMPLOYEES	7÷	40.04	1.4	*	1.4	4.158		24.75	5.0	10.01	20.0%	25.0\$	40.0
		H-S	0.0	0.0	**	0.0	0		12.50	10.0	30.0	25.0\$	15.0\$	20.0%
		0÷	5.0%	0.2	*	0.2	520		14.73	10.01	25.0	35.0\$	15.0\$	15.0%
		∄ -0	50.0	1.8	*	1.8	5,198		21.70	5.0\$	20.0\$	20.0%	20.0	35.0%
•		0-0	5.0	0.2	*	0.2	520		15.93	10.01	25.0\$	35.0\$	15.0\$	15.0\$
ON-SITE TRUCK TRIPS	759 ACRES	0-0	100.01	89 89	*0	89 89	6,694		6.20	75.0%	20.0\$	5.0\$	0.0	0.0
BAY AREA TRUCK TRIPS	759 ACRES	0-0	100.0%	. 14.3	80	14.3	10,819		28.85	15.0\$	25.01	30.0\$	20.0\$	10.0%
LONG DISTANCE TRUCK TRIPS	S 759 ACRES	0-0	100.0%	8. 8.	80	8.	4,433		77.50	10.0	20.0\$	25.0\$	25.0\$	20.0%
TOTALS							33,805	0.0						

Notes: H-W = home-work trips

H·S = home·shopping trips

H-O = home-other trips

0-W = other-work trips

0-0 = other-other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-37. VEHICLE TRAVEL SUMMARY, ALTERNATIVE C

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	± ± ± ο ο	0000	24.8 12.5 14.7 21.7	17.94 7.40 8.59 14.83	0000	43.5 35.5 35.0 41.0
FISCO AREAS 4 & 5	0 EMPLOYEES	3 × · · · · · · · · · · · · · · · · · ·	00000	24.8 12.5 14.7 21.7	17.94 17.94 7.40 8.59 14.83		43.5 35.0 35.0 35.0
JIT AREA	208 EMPLOYEES	¥ \(\cdot \) \(\	291 0 36 364 364	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	5,222 0 309 5,398 335	43.5 35.5 35.0 41.0 35.0
SPRR TERMINAL	210 EMPLOYEES	3. O 3. O 0.	294 0 37 368 37	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83	5,275 0 318 5,457 344	43.5 35.5 35.0 41.0 35.0
UP RAIL TERMINAL	O EMPLOYEES	3 V O 3 O	0000	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	0000	43.5 35.5 35.0 41.0 35.0

TABLE N-37. VEHICLE TRAVEL SUMMARY, ALTERNATIVE C

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,970 EMPLOYEES	3-H	4,158	24.8	17.94	74,610	43.5
		S O.∓	0 520	12.5	7.40	0 4 468	35.5
		M-0	5,198	21.7	14.83	77,078	41.0
		0-0	520	15.9	9.29	4,832	35.0
ON-SITE TRUCK TRIPS	759 ACRES	0-0	6,694	6.2	1.86	12,451	18.0
BAY AREA TRUCK TRIPS	759 ACRES	0-0	10,819	28.9	16.11	174,272	33.5
LONG DISTANCE TRUCK TRIPS	759 ACRES	0.0	4,433	77.5	48.44	214,723	37.5
		•				•	
TOTALS:		¥-H	4,743	24.8	17.94	85,107	43.5
		H-S	0	0.0	0.00	0	0.0
		0-H	593	14.8	8.59	5,095	34.9
		M-0	5,930	21.7	14.83	87,932	41.0
		0-0	22,539	31.4	18.06	406,956	34.6
			33,005	4.87	17.31	160,686	36.5

Notes:

H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
WMT = vehicle miles traveled

TABLE N-38. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE C

Table Market Ma				Average		Exhaust	Exhaust	Total PM10	Summer	Winter	ROG	NOX	PM10	Summer CO	Winter CO
5 0 PRECOMESS HAW 17.94 O 0.25 0.54 0.11 0.16 4.69 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Land Use	Trip Estimate Basis	Tr1p Purpose	Distance (miles)	VMT by Category	ROG Rate (gm/mile)	NOx Rate (gm/mile)	Emission Rate (gm/mile)	CO Rate (gm/mile)	CO Rate (gm/mile)	Emissions (1bs/day)	Emissions (lbs/day)	Emissions (lbs/day)	Emissions (1bs/day)	Emissions (1bs/day)
5 Deputition 14 17.34 0 0 0.56 0.54 3.11 3.61 4.69 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.															
Fig. 1.40 0.28 0.58 3.11 3.96 4.56 0.0	-5	0 EMPLOYEES	¥	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
However Howeve			H·S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
5 DEMONTES H4 14.83 0 0.23 0.65 3.11 3.61 4.65 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			0÷	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
5			≯ -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
Fig. 6 PRHOMES HW 17.94 0 0.25 0.55 3.11 3.61 4.68 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
H-5 7.40 0 0.29 0.53 3.11 3.96 4.95 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	FISCO AREAS 4 & 5	0 EMPLOYEES	*	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0
Ho Howevery Holes and help and help are seen to the series of the series			H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
200 14,883 0 0.23 0.52 3.11 3.34 4,25 0.0 0			0 ±	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
208 PHOUTES H-W 17-94 5,222 0.26 0.54 3.11 3.64 4.68 3.2 6.2 3.58 4 H-M 17-94 5,222 0.26 0.54 3.11 3.94 4.68 3.2 6.2 3.58 4 H-M 14-83 5,398 0.23 0.55 3.11 3.94 4.25 3.13 0.2 0.4 2.13 H-M 14-83 5,398 0.23 0.55 3.11 3.94 4.25 3.13 0.2 0.4 2.13 H-M 17-94 5,275 0.28 0.55 3.11 3.96 4.95 0.0 0.0 0.0 H-M 17-94 5,275 0.28 0.55 3.11 3.97 5.13 0.2 0.4 2.2 H-M 17-94 5,477 0.23 0.55 3.11 3.97 5.13 0.2 0.4 2.2 H-M 17-94 0.28 0.29 0.51 3.11 3.97 5.13 0.0 0.0 H-M 17-94 0.28 0.25 3.11 3.97 5.13 0.0 0.0 H-M 17-94 0.28 0.25 3.11 3.97 5.13 0.0 0.0 H-M 17-94 0.28 0.25 3.11 3.97 5.13 0.0 0.0 H-M 17-94 0.28 0.25 3.11 3.97 5.13 0.0 0.0 H-M 17-94 14-83 0.29 0.25 3.11 3.97 5.13 0.0 0.0 H-M 17-94 14-83 0.29 0.25 3.11 3.94 4.25 0.0 0.0 H-M 17-94 14-83 0.29 0.25 3.11 3.94 4.25 0.0 0.0 H-M 14-83 0.29 0.29 0.25 3.11 3.94 4.25 0.0 0.0 H-M 14-83 0.29 0.29 0.25 3.11 3.94 4.25 0.0 0.0 H-M 14-83 0.29 0.23 0.21 3.11 3.94 4.25 0.0 0.0 H-M 14-83 0.29 0.29 0.21 3.11 3.94 4.25 0.0 0.0 H-M 14-83 0.20 0.21 0.47 3.11 3.94 4.25 0.0 0.0 H-M 14-83 0.20 0.21 0.47 3.11 3.94 4.25 0.0 0.0 H-M 14-83 0.20 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 H-M 14-83 0.20 0.21 0.47 3.11 0.24 0.0 0.0 H-M 14-83 0.20 0.21 0.47 0.47 0.47 0.0 0.0 H-M 14-83 0.20 0.21 0.47 0.47 0.47 0.0 0.0 H-M 14-83 0.20 0.21 0.47 0.47 0.47 0.0 0.0 H-M 14-84 0.20 0.20 0.44			ă. O	14.83	•	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
208 EMPLOYEES H-W 17.94 5.222 0.26 0.54 3.11 3.61 4.68 3.2 6.2 35.8 1.1 1.00 4.68 1.1 1.00 1.2 1.00 1.2 1.00 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.			0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
H-S 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	JIT AREA	208 EMPLOYEES	<u> </u>	17.94	5.22	0.26	25.0	3.11	14.	89	r	4	, e		ŝ
H-O B-S9 309 0.23 0.53 3.11 3.97 5.13 0.2 0.4 2.1 210 FHPLOYEES H-W 17.94 5.275 0.28 0.59 3.11 3.91 3.91 6.2 37.0 3.1 CD-W 14.83 5.398 0.23 0.52 3.11 3.61 3.61 0.2 0.4 2.3 H-O B-S9 318 0.29 0.53 3.11 3.61 4.68 3.2 6.2 36.2 4.2 H-O B-S9 318 0.29 0.53 3.11 3.97 5.13 0.2 0.4 2.2 O-W 14.83 5.457 0.23 0.52 3.11 3.97 5.13 0.2 0.4 2.2 O-W 14.83 5.457 0.23 0.52 3.11 3.94 4.25 3.1 6.3 37.4 4.2 O-W 14.83 0.29 0.53 3.11 3.97 5.13 0.2 0.4 2.4 H-O B-S9 344 0.21 0.47 3.11 3.61 4.68 0.0 0.0 0.0 H-O B-S9 0.0 0.28 0.55 3.11 3.97 5.13 0.0 0.0 0.0 H-O B-S9 0.0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 H-O B-S9 0.0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 O-W 14.83 0.0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 O-W 14.83 0.0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 O-W 14.83 0.0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.83 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.84 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.85 0.0 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.85 0.0 0.0 0.21 0.47 3.11 3.94 4.25 0.0 0.0 0.0 O-W 14.85 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			H-S	7.40	0	0.28	0.55	3.11	3.86	36.4	0.0	1.0	9 0		0.55
0-W 14.83 5.398 0.23 0.52 3.11 3.34 4.25 3.1 6.2 37.0 210 EMPLOYEES H-W 17.94 5.275 0.28 0.29 0.55 3.11 3.61 6.2 3.6 2 1-5 7.40 0.28 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 0.0 1-6 8.59 318 0.29 0.53 3.11 3.86 4.95 0.0 0.0 0.0 0.0 1-7 14.83 5.457 0.23 0.25 3.11 3.94 4.25 3.1 6.2 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 3.1 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3			0-H	8.59	309	0.29	0.53	3.11	3.97	5.13	0.2	0.4	2.1	2.7	3.5
10 CHPLOYEES H-W 17.94 5.275 0.26 0.54 3.11 3.64 4.68 3.2 6.2 36.2 36.2 36.2 36.2 36.2 36.2 3			1 -0	14.83	5,398	0.23	0.52	3.11	3.34	4.25	3.1	6.2	37.0	39.7	50.6
210 EMPLOYEES H-M 17.94 5,275 0.26 0.54 3.11 3.61 4.68 3.2 6.2 36.2 H-S 7.40 0 0.28 0.55 3.11 3.97 5.13 0.0 0.0 0.0 H-O 8.59 318 0.29 0.53 3.11 3.97 5.13 0.2 0.4 2.2 0-M 14.83 5.457 0.23 0.52 3.11 3.34 4.25 3.1 6.3 37.4 0-M 14.83 5.457 0.23 0.52 3.11 3.94 4.25 3.1 6.3 37.4 0-M 9.29 344 0.21 0.47 3.11 3.61 4.68 0.0 0.0 0.0 0.0 0-M 1.54 0.26 0.54 3.11 3.61 4.68 0.0 0.0 0.0 0.0 0-M 0.40 0.52 0.54 3.11 3.94 4.25 0.0			0-0	9.29	335	0.21	0.47	3.11	2.94	3.61	0.2	4.0	2.3	2.2	2.7
H-S 7.40 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	CDDD TEDMINAL	910 GWD 0755	3	1	210 3	6		;		•	•	•	;	1	
H-O 8.59 318 0.29 0.53 3.11 3.97 5.13 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			± ±	7.40	6,7	8	ָר אַנ היי	3.11	3.07	8 8	2.5	7.0	3.00	0.24	4.4.
0-W 14.83 5.457 0.23 0.55 3.11 3.34 4.25 3.1 6.3 37.4 7.4 0.0 9.29 344 0.21 0.47 3.11 2.94 3.61 0.2 0.4 2.4 0.0 0.24 0.25 0.54 3.11 3.61 4.68 0.0 0.0 0.0 0.0 0.0 0.29 0.53 3.11 3.34 4.25 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			H.0	8.59	318	0.29	0.53	3.11	3.97	5.13	0.2	6. 0	2.2	2.8	9. 6.
0-0 9.29 344 0.21 0.47 3.11 2.94 3.61 0.2 0.4 2.4 0 EMPLOYEES H-W 17.94 0 0.26 0.55 3.11 3.61 4.68 0.0 0.0 0.0 H-S 7.40 0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 O-W 14.83 0 0.23 0.53 3.11 3.34 4.25 0.0 0.0 0.0 O-W 9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0 0.0			H-0	14.83	5,457	0.23	0.52	3.11	3.34	4.25	3.1	6.3	37.4	40.2	51.1
0 EMPLOYEES H-W 17.94 0 0.26 0.54 3.11 3.61 4.68 0.0 0.0 0.0 H-S 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 H-O 8.59 0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 O-W 14.83 0 0.23 0.52 3.11 3.34 4.25 0.0 0.0 0.0 0-0 9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0			0-0	9.29	344	0.21	0.47	3.11	2.94	3.61	0.2	4.0	2.4	2.2	2.7
U CHILLUTES H'W 17.54 U 0.26 0.54 3.11 3.61 4.68 0.0 0.0 0.0 0.0 H-S 7.40 0 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 H-O 8.59 0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 O-W 14.83 0 0.23 0.52 3.11 3.34 4.25 0.0 0.0 0.0 O-O 9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0	TAG CI	of the control of	:	?	•	•			;						
7.40 0 0.28 0.55 3.11 3.86 4.95 0.0 0.0 0.0 8.59 0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 14.83 0 0.23 0.52 3.11 3.34 4.25 0.0 0.0 0.0 9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0	OF MIL IEMINAL	U EMPLUIEES		F. /1	>	0.70	4c.0	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
8.59 0 0.29 0.53 3.11 3.97 5.13 0.0 0.0 0.0 14.83 0 0.23 0.52 3.11 3.34 4.25 0.0 0.0 0.0 9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0			÷S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
14.83 0 0.23 0.52 3.11 3.34 4.25 0.0 0.			¥-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
9.29 0 0.21 0.47 3.11 2.94 3.61 0.0 0.0 0.0			∄ -0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
			0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE N-38. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE C

Land Use	Trip Estimate Basis	Tr1p Purpose	Average Trip Distance Purpose (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	Emiss (1bs/	PH10 Summer CO Winter CO itons Emissions Emissions (day) (lbs/day) (lbs/day)	Winter CO Emissions (1bs/day)
MARINE TERMINAL AREAS	2,970 EMPLOYEES	ž	17.94	74,610	0.26	0.54	3.11	3.61	4.68	45.6	88.1	511.4	593.7	769.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	4,468	0.29	0.53	3.11	3.97	5.13	3.3	5.2	30.6	39.1	50.6
		∓ .0	14.83	77,078	0.23	0.52	3.11	3.34	4.25	43.9	88.9	528.3	567.6	722.0
		0-0	9.29	4,832	0.21	0.47	3.11	2.94	3.61	2.6	5.1	33.1	31.3	38.5
ON-SITE TRUCK TRIPS	759 ACRES	0-0	1.86	12,451	2.97	11.14	4.53	14.32	14.42	82.0	305.9	124.2	393.1	395.7
BAY AREA TRUCK TRIPS	759 ACRES	0-0	16.11	174,272	1.82	10.46	4.53	8.15	8.21	700.5	4,017.4	1,738.9	3,131.1	3,152.7
LONG DISTANCE TRUCK TRIPS	S 759 ACRES	0-0	48.44	214,723	1.67	10.84	4.53	7.59	7.64	806.3	5,129.8	2,142.5	3,593.5	3,618.9
TOTALS			17.31	585,091						1,697.7	9,666.7	5,264.5	8,522.6	8,970.2

ROG - reactive organic compounds

NOx = nitrogen oxides

PMIO = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE N.39. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE C AND EMISSION RATES FOR 2010

		Net Tri	Wet Daily Vehicle Trip Generation			Average Summer Day Traffic.Related Ozone Precursor Emissions (pounds per day)		Average Daily Exhaust Plus Entrained	Average Daily Traffic- Related Carbon Monoxide Emissions (pounds per day)	y Traffic- n Monoxide ns
	Amount of	Internal	External	Total	Daily VMT	Sa	Š	spunod)	Toward.	i di se
רפות חשב	Development	Sch -	Soli I	cdi II	rscillate.	NAN .	VON	her day		MILLE
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
JIT AREA	208 EMPLOYEES	0	727	727	11,263	6.7	13.1	77.2	86.2	110.6
SPRR TERMINAL	210 EMPLOYEES	0	736	736	11,394	6.8	13.2	78.1	87.2	111.8
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0	0.0	0.0
MARINE TERMINAL AREAS	2,970 EMPLOYEES	0	10.396	10,396	160,988	95.5	187.2	1,103.5	1,231.6	1,580.4
ON-SITE TRUCK TRIPS	759 ACRES	6.694	0	6.694	12,451	82.0	305.9	124.2	393.1	395.7
BAY AREA TRUCK TRIPS	759 ACRES	0	10,819	10,819	174,272	700.5	4,017.4	1,738.9	3,131.1	3,152.7
LONG DISTANCE TRUCK TRIPS	759 ACRES	0	4.433	4,433	214,723	806.3	5,129.8	2,142.5	3,593.5	3,618.9
Auto Trips:		0	11,859	11,859	183,645	108.9	213.6	1,258.8	1,404.9	1,802.8
Truck Trips		6,694	15,252	21,946	401.446	1,588.8	9,453.1	4,005.7	7,117.7	7,167.4
Total		6,694	27,111	33,805	585,091	1,697.7	9,666.7	5,264.5	8,522.6	8,970.2

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-40. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE C

	Annual Vehicle				nnual Vehic (ear) For A		
Land Use	Trips	Annual VMT	ROG	NOx	CO	S0x	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	181,750	2,815,751	0.83	1.64	11.79	0.09	9.65
SPRR TERMINAL	184,000	2,848,509	0.84	1.66	11.92	0.09	9.76
JP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,599,000	40,246,997	11.93	23.40	168.48	1.33	137.94
ON-SITE TRUCK TRIPS	1,673,500	3,112,710	10.25	38.24	49.25	2.20	15.53
BAY AREA TRUCK TRIPS	2,704,750	43,567,888	87.56	502.17	392.29	30.74	217.36
ONG DISTANCE TRUCK TRIPS	1,108,250	53,680,859	100.78	641.23	450.25	37.87	267.82
Autos	2,964,750	45,911,257	13.6	26.7	192.2	1.5	157.0
Trucks	5,486,500	100,361,457	198.6	1,181.6	891.8	70.8	157.3 500.7
Total	8,451,250	146,272,714	212.2	1,208.3	1,084.0	72.3	658.1

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-41. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE D

Land Use or Trip Generation Category	Trip Estimate Basis		Base Trip Vehicle keneration Generation Rate Rate	Vehicle neration · Rate	Base Trip Vehicle P/A Trip Rate Splits Generation Generation	Splits ractions	Base Trip Volume	# Productions W Internal Destinations	Inte	*	uttractions Number of Internal/ W Internal Internal Trip External Origins Attractions Trips	Number of Internal/ ernal Trip External tractions Trips	rnal/ Net ernal Trips Adjusted Trips Generated Trip Rate		Trip Rate Adjustment Factor
ETECO ADEAC 1 2 8 2	SEEN REPORT OF	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ć	6	* 0-	•	6	Š	•			· ·			
FISCO AREAS 4 & 5	0 EMPLOYEES	EES .	0.0	2.0	101	106		5 5		8 8			0	0.0	0.0
JIT AREA	343 EMPLOYEES	(EES	3.50	9.0	101	\$ 06	1,201	X 0		X 0	0	1,201	1,201	3.5	0.0
SPRR TERMINAL	0 EMPLOYEES	(EES	0.00	0.0	101	\$ 06	0	**		*0	0	0	0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	rEES	0.00	0.0	10%	\$ 06	0	**		*0	0	0	0	0.0	0.0
MARINE TERMINAL AREAS	2,923 EMPLOYEES	rees	3.50	9.0	10\$	\$ 06	10,231	\$ 0	•	X 0	0	10,231	10,231	3.5	0.0
ON-SITE TRUCK TRIPS	747 ACRES	Ş	8.56	0.0	20\$	20\$	6,394	**	•	X 0	0	6,394	6.394	8.6	0.0
BAY AREA TRUCK TRIPS	747 ACRES	S	14.47	0.0	20\$	20 \$	10,812	*0	•	X 0	0	10,812	10,812	14.5	0.0
LONG DISTANCE TRUCK TRIPS	747 ACRES	S	5.93	0.0	201	20 \$	4,430	*0	•	**	0	4,430	4.430	5.9	0.0%
											:	:	:		:
TOTALS							33,068		0		0	33,068	33,068		0.0

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Assoicates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-42. TRIP PURPOSE, TOM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE D

		Ę	Percent of Net	Net	TCM	Adjusted	Adjusted	Overal1	Hean Tr1p	Percent	of Travel	Percent of Travel Time by Speed (mph)	d (mph)	
Land Use	Trip Estimate Basis	Purpose	Tr1ps	Rates	Effect	Trip Rate		Effectiveness	(Minutes)	15	52	35	45	55
FISCO AREAS 1, 2, 8 3	0 EMPLOYEES	H-H	40.0\$	0.0	8	0.0	0		24.75	5.0\$	10.01	20.0\$	25.0\$	40.01
		H·S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0\$	25.0%	15.0\$	20.0%
		Н-0	5.0	0.0	86	0.0	•		14.73	10.01	25.0\$	35.0	15.0	15.01
		∦ ·0	£0.0 \$	0.0	*0	0.0	0		21.70	5.0	20.0%	20.0%	20.0\$	35.0
		0.0	5.0	0.0	**	0.0	0		15.93	10.01	25.0\$	35.0\$	15.0%	15.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	3 .±	40.0%	0.0	* 6	0.0	0		24.75	5.0\$	10.01	20.0\$	25.0\$	40.0
		H-S	0.0	0.0	* 0	0.0	0		12.50	10.01	30.0%	25.0	15.0	20.0\$
		9.	5.0	0.0	*	0.0	0		14.73	10.01	25.0	35.0\$	15.0	15.0\$
		≆ ô	\$0.0 x	0.0	*0	0.0	0		21.70	5.0\$	20.0\$	20.0\$	20.0%	35.0%
		0-0	5.0%	0.0	* 0	0.0	0		15.93	10.01	25.0%	35.0%	15.0	15.04
JIT AREA	343 EMPLOYEES	÷	40.0\$	1.4	*	1.4	480		24.75	5.0	10.0	20.0\$	25.02	40.0%
		H-S	0.0	0.0	X 0	0.0	0		12.50	10.01	30.0	25.0\$	15.0%	20.0%
		О-Н	5.0\$	0.2	8	0.2	09		14.73	10.01	25.0	35.0%	15.0	15.0\$
		⊪ -0	20.0	1.8	*0	1.8	601		21.70	5.0\$	20.0\$	20.0%	20.0	35.0
		0.0	5.0\$	0.2	*0	0.2	9		15.93	10.01	25.0\$	35.0\$	15.0%	15.0%
SPRR TERMINAL	0 EMPLOYEES	¥.	40.0%	0.0	*0	0.0	0		24.75	5.0\$	10.01	20.01	70 50	40 0%
		H-S	0.0	0.0	*0	0.0	0		12.50	10.01	30.0\$	25.01	15.0\$	20.0%
		÷0	5.0	0.0	*0	0.0	•		14.73	10.0%	25.0\$	35.0\$	15.0\$	15.01
		3 •	50.0	0.0	**	0.0	0		21.70	5.0	20.0%	20.02	20.0%	35.0%
		0-0	5.0	0.0	*0	0.0	0		15.93	10.01	25.01	35.0\$	15.0\$	15.0%
UP RAIL TERMINAL	0 EMPLOYEES	ž	40.01	0.0	*0	0.0	0		24.75	بر چ	10	30 04	90	9
		H-S	\$0.0	0.0	**	0.0	0		12.50	10.0	30.0%	25.0%	15.01	20.02
		0-н	5.0	0.0	*	0.0	0		14.73	10.01	25.0\$	35.0\$	15.0\$	15.0
		M-0	50.0	0.0	80	0.0	0		21.70	5.0	20.03	20.0%	20.0%	35.0%
		0-0	5.0%	0.0	8	0.0	0		15.93	10.01	25.0\$	35.01	15.01	15.0\$

TABLE N-42. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE D

		r c	Percent	Net Trás	TC#	Adjusted	Adjusted	Overall	Mean Trip	Percent (of Travel T	Percent of Travel Time by Speed (mph)	1 (mph)	
Land Use	Trip Estimate Basis	Purpose	Trips	Rates	Effect	net Trip Rate	net Trips Ef	net Trips Effectiveness	(Minutes)	15	52	15 25 35 45	45	55
MARINE TERMINAL AREAS	2.923 EMPLOYEES	Ĭ	40.0	1.4	8	1.4	4.092		24.75	5.0	10.0	20.0\$	25.0\$	40.0%
		S- H	0.0	0.0	*0	0.0	0		12.50	10.01	30.0%	25.0%	15.0%	20.0%
		H-0	5.0\$	0.2	**	0.2	512		14.73	10.01	25.0\$	35.0\$	15.0%	15.0%
		A -0	20.0%	1.8	**	1.8	5,116		21.70	5.0\$	20.0%	20.0%	20.0%	35.0%
		0-0	5.0	0.2	*0	0.2	512		15.93	10.0	25.0\$	35.0\$	15.0%	15.0\$
ON-SITE TRUCK TRIPS	747 ACRES	0-0	100.0%	8.6	**	8.6	6,394		6.20	75.0\$	20.0%	5.0	0.0	0.0
BAY AREA TRUCK TRIPS	747 ACRES	0-0	100.0%	14.5	X 0	14.5	10,812		28.85	15.01	25.0\$	30.0%	20.02	10.01
LONG DISTANCE TRUCK TRIPS	S 747 ACRES	0-0	100.0	5.9	**	5.9	4.430		77.50	10.01	20.0%	25.0%	25.0%	20.0\$
TOTALS							33,069	0.0						

Notes: H-W = home-work trips H-S = home-shopping trips

H-O = home-other trips

0-W = other-work trips

0.0 = other-other trips

TCM - transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns

plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N.43. VEHICLE TRAVEL SUMMARY, ALTERNATIVE D

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	ĭ. 3•	0	24.8	17.94	O	43 5
		H-S	0	12.5	7.40	0	35.5
		0-н	0	14.7	8.59	0	35.0
		M-0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.29	0	35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	Ж- Н	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		Н-0	0	14.7	8.59	0	35.0
		™ -0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.59	0	35.0
JIT AREA	343 EMPLOYEES	м-н	480	24.8	17.94	8.613	43.5
		H-S	0	12.5	7.40	0	35.5
		Н-0	09	14.7	8.59	516	35.0
		M-0	601	21.7	14.83	8,912	41.0
		0-0	09	15.9	9.29	558	35.0
SPRR TERMINAL	0 EMPLOYEES	¥-H	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		0-H	0	14.7	8.59	0	35.0
		M-0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.29	0	35.0
UP RAIL TERMINAL	0 EMPLOYEES	3-∺	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		Н-0	0	14.7	8.59	0	35.0
		M-0	0	21.7	14.83	0	41.0
		0-0	0	15.9	9.53	0	. 35.0

TABLE N-43. VEHICLE TRAVEL SUMMARY, ALTERNATIVE D

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,923 EMPLOYEES	м-н	4,092	24.8	17.94	73,426	43.5
		S - H	0 512	12.5 14.7	7.40 8.59	0 4,399	35.5 35.0
		M-0	5,116	21.7	14.83	75,862	41.0
		0-0	512	15.9	9.29	4,758	35.0
ON-SITE TRUCK TRIPS	747 ACRES	0-0	6,394	6.2	1.86	11,893	18.0
BAY AREA TRUCK TRIPS	747 ACRES	0-0	10,812	28.9	16.11	174,159	33.5
LONG DISTANCE TRUCK TRIPS	747 ACRES	0-0	4,430	77.5	48.44	214,578	37.5
				•			
TOTALS:		¥.	4,572	24.8	17.94	82,039	43.5
		H-S	0	0.0	0.00	0	0.0
		H-0	572	14.8	8.59	4,915	34.9
		м-0	5,717	21.7	14.83	84,774	41.0
		0-0	22,208	31.7	18.28	405,945	34.6
			33,069	28.7	17.47	577,672	36.5

Notes:

H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
WMT = vehicle miles traveled

TABLE N-44. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE D

			Average		Exhaust	Exhaust	Total PM10	Summer	Winter	ROG	VQ¥	PH10	Summer CO	Winter CO
Land Use	Trip Estimate Basis	Tr1p Purpose	Distance (miles)	VMT by Category	ROG Rate (gm/mile)	NOx Rate (gm/mile)	Emission Rate (gm/mile)	CO Rate (gm/mile)	CO Rate (gm/mile)	Emissions (lbs/day)	Emissions (1bs/day)	Emissions (1bs/day)	Emissions (lbs/day)	Emissions (lbs/day)
:														
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	* :	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		S .	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0 ±	8.59	•	6.3	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		∄ .0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	±	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		¥-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		0÷	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		74-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	343 EMPLOYEES	3 ±	17.94	8,613	0.26	0.54	3.11	3.61	89.4	5.3	10.2	59.0	68.5	80
		H.S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-0	8.59	516	0.29	0.53	3.11	3.97	5.13	9.4	9.0	3.5	4.5	5.8
		≱ -0	14.83	8,912	0.23	0.52	3.11	3.34	4.25	5.1	10.3	61.1	65.6	83.5
		0-0	9.29	558	0.21	0.47	3.11	2.94	3.61	0.3	9.0	3.8	3.6	4.4
CODD TEDUTUAL	SEANO IGNE O	3	17 04	•	90	ć	:	19 6	97 7	•	Ġ		•	•
		: ±	7.40	, ,	23.0	55	3.11	98	. 4 8. 8	2 6	9 6		9 6	9 6
		0-±	8.59	•	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		M-0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
UP RATE TERMINAL	O EMPI OYEES	3-1	17.94	c	97.0	929	3.11	1912	89	c	c	-	•	c
		¥-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		н-0	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		A- 0	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		0-0	67.6	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
				İ										

TABLE N-44. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE D

Land Use	Trip Estimate Basis	Tr†p Purpose	Average Trip Distance pose (miles)	Exhaust VMf by ROG Rate Category (gm/mile)	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOX Emissions (1bs/day)	ROG NOX PMIO Summer CO Winter CO Emissions Emissions Emissions Emissions (lbs/day) (lbs/day) (lbs/day) (lbs/day)	Summer CO Winter CO Emissions Emissions (1bs/day) (1bs/day)	Winter CO Emissions (1bs/day)
MARINE TERMINAL AREAS	2,923 EMPLOYEES	Η÷	17.94	73,426	0.26	0.54	3.11	3.61	4.68	44.8	86.7	503.3	584.2	757.1
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		н. О	8.59	4,399	0.29	0.53	3.11	3.97	5.13	3.3	5.1	30.2	38.5	49.8
		3 -0	14.83	75,862	0.23	0.52	3.11	3.34	4.25	43.2	87.4	520.0	558.6	710.6
		0-0	9.29	4,758	0.21	0.47	3.11	2.94	3.61	5.6	5.0	32.6	30.8	37.9
ON-SITE TRUCK TRIPS	747 ACRES	0-0	1.86	11,893	2.97	11.14	4.53	14.32	14.42	78.3	292.2	118.7	375.5	378.0
BAY AREA TRUCK TRIPS	747 ACRES	0-0	16.11	174,159	1.82	10.46	4.53	8.15	8.21	700.0	4,014.8	1,737.8	3,129.0	3,150.7
LONG DISTANCE TRUCK TRIPS	747 ACRES	0-0	48.44	214,578	1.67	10.84	4.53	7.59	7.64	805.7	5,126.3	2,141.1	3,591.1	3,616.4
TOTALS			17.47	577,672						1,689.1	9,639.2	5,211.1	8,450.0	8,883.1

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 - inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions

used to compute average trip lengths.

TABLE N-45. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE D AND EMISSION RATES FOR 2010

		Net Tri	Net Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions	ner Day ed Ozone issions	Average Daily Exhaust Plus Entrained	Average Daily Traffic. Related Carbon Monoxide Emissions	y Traffic. n Monoxide ns
	Amount of	Internal	External	Total	Daily VMT	(pounds per day)	day)	PM10 Emissions	(pounds per day)	r day)
Land Use	Development	Trips	Trips	Trips	Estimate	R0G	NOX	(pounds	Summer	Winter
FISCO ARFAS 1. 2 & 3	SHADIOVEFC	-	c	· ·	<					
FISCO AREAS 4 & 5	0 FMPI OYEFS	· -	.	> <	-	0.0	0.0	0.0	0.0	0.0
JIT AREA	343 EMPLOYEES	· c	12,	1 201	19 509	0.0	0.0	0.0	0.0	0.0
SPRR TERMINAL	0 EMPI OYEFS	· c			060.01	0.11	6.1.6	12/.5	142.3	182.6
IID DATI TEDMINA	מבונט סיבוני	, c		> (> (0.0	0.0	0.0	0.0	0.0
OF RAIL LENTINAL	U EMPLUYEES	-	0	0	0	0.0	0.0	0.0	0.0	0.0
MARINE TERMINAL AREAS	2,923 EMPLOYEES	0	10.232	10,232	158,445	94.0	184.2	1,086.1	1.212.1	1,555.4
ON-SITE TRUCK TRIPS	747 ACRES	6,394	0	6,394	11,893	78.3	292.2	118.7	375.5	378.0
BAY AREA TRUCK TRIPS	747 ACRES	0	10,812	10,812	174,159	700.0	4,014.8	1,737.8	3,129.0	3,150.7
LONG DISTANCE TRUCK TRIPS	747 ACRES	0	4,430	4,430	214.578	805.7	5,126.3	2,141.1	3,591.1	3,616.4
						:			:	
Auto Trips:		0	11,433	11,433	177,043	105.0	205.9	1,213.5	1,354.4	1,738.0
Truck Trips:		6,394	15.242	21,636	400,630	1,584.1	9,433.3	3,997.5	7,095.6	7,145.1
Total		6,394	26,675	33,069	577,672	1,689.1	9,639.2	5,211.1	8,450.0	8,883.1

ROG = reactive organic compounds

NOx = nitrogen oxides PM10 = inhalable particulate matter Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-46. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS. ALTERNATIVE D

	Annual Vehicle				nual Vehic (ear) For A		
Land Use	Trips	Annual VMT	ROG	NOx	СО	S0x	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	300,250	4,649,482	1.38	2.70	19.46	0.15	15.93
SPRR TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,558,000	39,611,175	11.74	23.03	165.82	1.31	135.76
ON-SITE TRUCK TRIPS	1,598,500	2,973,210	9.79	36.53	47.04	2.10	14.83
BAY AREA TRUCK TRIPS	2,703,000	43,539,699	87.50	501.85	392.03	30.72	217.22
LONG DISTANCE TRUCK TRIPS	1,107,500	53,644,531	100.72	640.79	449.94	37.85	267.64
Autos	2,858,250	44,260,657	13.1	25.7	185.3	1.5	151.7
Trucks	5,409,000	100,157,440	198.0	1,179.2	889.0	70.7	499.7
Total	8,267,250	144,418,097	211.1	1,204.9	1,074.3	72.1	651.4

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-47. SUMMARY OF TRAIN TYPE DATA USED FOR EMISSIONS ANALYSES

TRAIN	TYPICAL LENGTH	AVERAGE GROSS	# 0F	ENGINE MIX	CHASIS	ENGINE	DATARACE	EMISS		LBS PER :	1,000 TON-	MILES
TYPE	(FEET)	TONS	ENGINES	FACTOR	MODEL	CYCLE	CODE	ROG	NOx	CO	S0x	PM10
amtrak	600	500	1	100%	F59PHI	LINE	22	0.011	0.727	0.071	0.011	0.017
amtrak	1200	1000	2	100%	GP40	LINE	17	0.032	0.755	0.115	0.011	0.017
SWITCHER	300	250	•	1004	O. 11 = 0.0							
FREIGHT	1200	350 1500	2	100%	SW1500 GP9	YARD LINE	3 11	0.051	0.819	0.120	0.011	0.022
		2000	-	1004	ur 3	LINE	11	0.045	0.814	0.136	0.011	0.018
FREIGHT	6000	6500	4	68 % 32 %	GP40 SD45	LINE LINE	17 29	0.032 0.032	0.755 0.731	0.115 0.084	0.073 0.073	0.018 0.018
FREIGHT	7500	8000	6	68%	GP40	LINE	17	0.032	0.755	0.115	0.073	0.018
				32%	SD45	LINE	29	0.032	0.731	0.084	0.073	0.018
SEGMENT:	A-SAC	A-SJ		C /D	277		·····					
MILES:	49	56	8 6	C/D 3.5	JIT 4	E 1.5	F 2	LATHROP :	SAN JOSE 43	GILROY 77		

Notes: S0x emission rates assume 0.05% sulfur for Amtrak, yard, and local freight locomotives, and 0.32% sulfur for long haul freight locomotives.

TABLE N-48. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, NO ACTION ALTERNATIVE

TDATU			DAILY	TRAIN NUME	BERS BY RA	IL SEGMEN	T, NO A	CTION		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP SA	N JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			4			4	4		2	2
FR6000	9	9	17		17	4	4	4		
TOTAL	25	17	47	26	17	48	20	4	14	2

TRAIN		D	AILY THOUS	SANDS OF	TON-MILES	BY RAIL	SEGMENT,	NO ACTION			TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	Ε	F	LATHROP S	AN JOSE	GILROY	FOR ALL SEGMENTS
AMT600	294	224	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98	0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0	0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0	0	12.0	0.0	0.0	3.0	4.0	0.0	43.0	49.0	111.0
FR6000	220.5	252	51.0	0.0	34.0	3.0	4.0	124.0	0.0	0.0	688.5
TOTAL	612.5	476	141.0	45.5	34.0	36.0	20.0	124.0	301.0	49.0	1,839.0

TABLE N-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

TRAIN		ANNUAL RO	G EMISSIO	NS (POUND	S/YEAR) BY	' RAIL SEG	MENT, NO	ACTION	ALTERNATIV	E	
TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	. 0	0	0	0	0	0.09
FR1200	0	0	199	0	0	50	66	0	713	813	0.92
FR6000	2,558	2,924	592	0	394	35	46	1,439	0	0	3.99
TOTALS	4,894	3,840	1,287	290	394	263	177	1,439	2,090	813	7.74
-											
TRAIN	••••	ANNUAL NOX	EMISSIO	NS (POUNDS	/YEAR) BY	RAIL SEG	MENT, NO	ACTION A	ALTERNATIV	E • • • • • • • • • • • • • • • • • • •	TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TONS/YR
AMT600	78,056	59,471	15,930	9,292	0	5.974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	3,563	0	0	891	1,188	0	12,768	14,550	16.48
FR6000	60,173	68,769	13,918	0	9,278	819	1,092	33,839	0	0	93.94
TOTALS	165,250	128,241	38,512	12,268	9,278	9,751	5,486	33,839	81,706	14,550	249.44

TABLE N-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

TRAIN		ANNUAL CO	EMISSIONS	(POUNDS)	YEAR) BY	RAIL SEGME	ENT, NO	ACTION A	LTERNATIVE		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	598	0	0	149	199	0	2,142	2,441	2.76
FR6000	8,457	9,666	1,956	0	1,304	115	153	4,756	0	0	13.20
TOTALS	20,202	15,485	4,878	1,356	1,304	1,163	696	4,756	9,529	2,441	30.91
TD A TAI		ANNUAL SOX	EMISSIONS	(POUNDS	/YEAR) BY	RAIL SEGM	IENT, NO	ACTION A	ALTERNATIVE		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
MT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	50	0	0	13	17	0	180	205	0.23

FR6000

TOTALS

5,905

6,749 1,366

7,546 7,686 1,743 190

0

911

911

80

218

107

174

3,321

3,321

0

1,260

0

205

9.22

11.63

TABLE N-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

TRAIN	A	NNUAL PM10	EMISSIONS	(POUNDS	/year) by	RAIL SEGN	ENT, NO	ACTION A	ALTERNATIV	E	
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	80	0	0	20	27	0	285	325	0.37
FR6000	1.457	1,665	337	0	225	20	26	819	0	0	2.27
TOTALS	3,952	3,071	921	294	225	231	129	819	1,919	325	5.94

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

S0x = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-50. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE A

TRAIN			DAILY TRA	IN NUMBER	S BY RAIL	SEGMENT	, ALTERN	ATIVE A		
TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP S	AN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	13	13	26		26	4	4	4		
TOTAL	29	21	54	26	26	48	20	4	14	2

TRAIN		DAI	LY THOUSA	NDS OF TO	N-MILES B	Y RAIL SE	GMENT, A	LTERNATIVE	Α		TOTAL FOR ALL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY	SEGMENTS
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	318.5	364.0	78.0	0.0	52.0	3.0	4.0	124.0	0.0	0.0	943.5
TOTAL	710.5	588.0	162.0	45.5	52.0	36.0	20.0	124.0	301.0	77.0	2,116.0

TABLE N-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

	 										
TDATAL		ANNUAL	ROG EMISS	IONS (POL	INDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE A		TOTAL
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,695	4,223	905	0	603	35	46	1,439	0	0	5.47
TOTALS	6,031	5,139	1,501	290	603	263	177	1,439	2,090	1,277	9.41
									· · · · · · · · · · · · · · · · · · ·		
TRAIN		ANNUAL	NOx EMISS	IONS (POL	JNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	IVE A		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TONS/YR
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	86,917	99,333	21,286	0	14,190	819	1,092	33,839	0	0	128.74

TOTALS 191,994 158,805 44,099 12,268 14,190 9,751 5,486 33,839 81,706 22,864 287.50

TABLE N-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

TRAIN		ANNUA	L CO EMISS	SIONS (POU	JNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA	TIVE A		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TONS/YE
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	12,216	13,962	2,992	0	1,995	115	153	4,756	0	0	18.09
TOTALS	23,961	19,781	5,615	1,356	1,995	1,163	696	4,756	9,529	3,835	36.34
TRAIN		ANNUAL	SOx EMISS	IONS (POU	NDS/YEAR)	BY RAIL S	SEGMENT,	ALTERNA	ΓIVE A		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28

218

174

3,321

3,321 0 0 12.63

322

15.09

1,260

FR6000 8,530 9,749 2,089 0 1,393 80 107

10,171 10,686 2,441 190 1,393

TOTALS

TABLE N-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

TDATA														
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR			
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70			
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56			
SW300	0	0	48	28	0	0	0	0	0	0	0.04			
FR1200	0	0	40	0	0	20	27	0	285	510	0.44			
FR6000	2,104	2,405	515	0	344	20	26	819	0	0	3.12			
TOTALS	4,599	3,811	1,059	294	344	231	129	819	1,919	510	6.86			

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

S0x = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-52. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE B

TRAIN			DAILY TRA	IN NUMBER	RS BY RAIL	. SEGMENT,	ALTERN	ATIVE B	110	
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	10	10	20		20	4	4	4		
TOTAL	26	18	48	26	20	48	20	4	14	2

TRAIN		DA1	LY THOUSA	NDS OF TO	N-MILES B	Y RAIL SE	GMENT, AI	В	TOTAL FOR ALL		
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY	SEGMENTS
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	245.0	280.0	60.0	0.0	40.0	3.0	4.0	124.0	0.0	0.0	756.0
TOTAL	637.0	504.0	144.0	45.5	40.0	36.0	20.0	124.0	301.0	77.0	1,928.5

TABLE N-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TRAIN		ANNUAL	ROG EMIS	SIONS (PO	UNDS/YEAR)	BY RAIL	. SEGMENT,	ALTERNA	TIVE B		- 10
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	2,843	3,249	696	0	464	35	46	1,439	0	0	4.39
TOTALS	5,178	4,165	1,292	290	464	263	177	1,439	2,090	1,277	8.32
		ANNUAL	NOx EMIS	SIONS (PO	UNDS/YEAR)	BY RAIL	SEGMENT.	ALTERNA'	TIVE B	<u> </u>	
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E		• • • • • • • • • • • • • • • • • • • •	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	66,859	76,410	16,374	0	10,916	819	1,092	33,839	0	0	103.15
TOTALS	171,936	135,882	39,187	12,268	10,916	9,751	5,486	33,839	81,706	22,864	261.92

TABLE N-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TRAIN		ANNUA	L CO EMISS	SIONS (PO	JNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA'	TIVE B		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	9,397	10,740	2,301	0	1,534	115	153	4,756	0	0	14.50
TOTALS	21,142	16,559	4,924	1,356	1,534	1,163	696	4,756	9,529	3,835	32.75
		ANNUAL	SOx EMISS	IONS (POL	INDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	TIVE B		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
MT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02

0 0 13 17 0

80

218

107 3,321

3,321

174

180

0

1,260

322

0

322

0.28

10.12

12.58

FR1200 0 0

6,562 7,499 1,607

8,202 8,436

FR6000

TOTALS

25

1,958

0

190

1,071

1,071

TABLE N-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TRAIN		ANNUAL F	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE B												
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR				
AMT600	1,845	1.406	377	220	0	141	63	0	1,350	0	2.70				
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56				
SW300	0	0	48	28	0	0	0	0	0	0	0.04				
FR1200	0	0	40	0	0	20	27	0	285	510	0.44				
FR6000	1,619	1,850	396	0	264	20	26	819	0	0	2.50				
TOTALS	4,114	3,256	940	294	264	231	129	819	1,919	510	6.24				

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

S0x = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-54. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE C

TOATN			DAILY TRA	IN NUMBER	RS BY RAIL	. SEGMENT	, ALTERN	ATIVE C		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP SA	AN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	14	13	27		27	4	4	4		
TOTAL	30	21	 55	26	27	48	20	4	14	2

TRAIN	DAILY THOUSANDS OF TON-MILES BY RAIL SEGMENT, ALTERNATIVE C										
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY	FOR ALL SEGMENTS
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	343.0	364.0	81.0	0.0	54.0	3.0	4.0	124.0	0.0	0.0	973.0
TOTAL	735.0	588.0	165.0	45.5	54.0	36.0	20.0	124.0	301.0	77.0	2,145.5

TABLE N-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TDATA		ANNUAL	ROG EMIS	SIONS (PO	UNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA	TIVE C		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,980	4,223	940	0	627	35	46	1,439	0	0	5.64
TOTALS	6,315	5,139	1,536	290	627	263	177	1,439	2,090	1,277	9.58
		AMMITAL	NOV ENTO	CTONC (DO	INDC (VEAD)	DV DATI	CEOVENT				
TRAIN			• • • • • • • • •		UNDS/YEAR)		SEGMENT,	ALTERNA	TIVE C		TOTAL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TONS/YR
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	. 0	0	1.42
FR1200	0	0	1.782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	93,603	99,333	22,104	0	14,736	819	1,092	33,839	0	0	132.76
TOTALS	198,680	158,805	44,917	12,268	14,736	9,751	5,486	33,839	81,706	22,864	291.53

TABLE N-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TOATH		ANNUAL	_ CO EMISS	IONS (POU	INDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA'	TIVE C		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	13,156	13,962	3,107	0	2,071	115	153	4,756	0	0	18.66
TOTALS	24,901	19,781	5,730	1,356	2,071	1,163	696	4,756	9,529	3,835	36.91
		ANNUAL	SOx EMISS	IONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA	TIVE C		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	9,186	9,749	2,169	0	1,446	80	107	3,321	0	0	13.03
TOTALS	10,827	10,686	2,521	190	1,446	218	174	3,321	1,260	322	15.48

TABLE N-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TRAIN	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE C											
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR	
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70	
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56	
SW300	0	0	48	28	0	0	0	0	0	0	0.04	
FR1200	0	0	40	0	0	20	27	0	285	510	0.44	
FR6000	2,266	2,405	535	0	357	20	26	819	0	0	3.21	
TOTALS	4,761	3,811	1,079	294	357	231	129	819	1,919	510	6.96	

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

SOx = sulfur oxides PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-56. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE D

TDATN			DAILY TRA	AIN NUMBER	RS BY RAIL	SEGMENT	, ALTERN	ATIVE D		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Е	F	LATHROP S	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	14	13	27		27	4	4	4		
TOTAL	30	21	55	26	27	48	20	4	14	2

TRAIN		DAI	LY THOUSA	NDS OF TO	N-MILES B	Y RAIL SE	GMENT, AL	TERNATIVE	D		TOTAL FOR ALL
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP S	AN JOSE	GILROY	SEGMENTS
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	343.0	364.0	81.0	0.0	54.0	3.0	4.0	124.0	0.0	0.0	973.0
TOTAL	735.0	588.0	165.0	45.5	54.0	36.0	20.0	124.0	301.0	77.0	2,145.5

TABLE N-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TRAIN		ANNUAL	ROG EMIS	SSIONS (PC	UNDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA	TIVE D		
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,980	4,223	940	0	627	35	46	1,439	0	0	5.64
TOTALS	6,315	5,139	1,536	290	627	263	177	1,439	2,090	1,277	9.58
	" - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	ANNUAL	NOx EMIS	SIONS (PO	UNDS/YEAR)	BY RAIL	SEGMENT	AI TERNA	TIVE D		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	Ε	• • • • • • • • • • • • • • • • • • • •	• • • • • • •	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	93,603	99,333	22,104	0	14,736	819	1,092	33,839	0	0	132.76
TOTALS	198,680	158,805	44,917	12,268	14,736	9,751	5,486	33,839	81,706	22,864	291.53

TABLE N-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TDATA		ANNUAL	CO EMISS	IONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNA'	TIVE D		
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YF
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	13,156	13,962	3,107	0	2,071	115	153	4,756	0	0	18.66
TOTALS	24,901	19,781	5,730	1,356	2,071	1,163	696	4,756	9,529	3,835	36.91
TD 4 TM	······································	ANNUAL	SOx EMISS	IONS (POU	NDS/YEAR)	BY RAIL	SEGMENT,	ALTERNAT	TIVE D	<u> </u>	
TRAIN TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
R1200	0	0	25	0	0	13	17	0	180	322	0.28
R6000	9,186	9,749	2,169	0	1,446	80	107	3,321	0	0	13.03
OTALS	10 927	10,686	 2,521	190	1,446	218	174	3,321	1,260	322	 15.48

TABLE N-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TRAIN	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE D											
TYPE	A-SAC	A-SJ	В	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	TOTAL TONS/YR	
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70	
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56	
SW300	0	0	48	28	Ō	0	0	0	0	0	0.04	
FR1200	0	0	40	0	0	20	27	0	285	510	0.44	
FR6000	2,266	2,405	535	0	357	20	26	819	0	0	3.21	
TOTALS	4,761	3,811	1,079	294	357	231	129	819	1,919	510	6.96	

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides CO = carbon monoxide

S0x = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

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E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-58. EMISSIONS FROM PORT OF OAKLAND RAIL TRAFFIC

	ANNUA	AL BAY ARE	A EMISSIO	NS, TONS/	YEAR
ALTERNATIVE	ROG	NOx	CO	S0x	PM10
NO ACTION	7.74	249.44	30.91	11.63	5.94
ALTERNATIVE A	9.41	287.50	36.34	15.09	6.86
ALTERNATIVE B	8.32	261.92	32.75	12.58	6.24
ALTERNATIVE C	9.58	291.53	36.91	15.48	6.96
ALTERNATIVE D	9.58	291.53	36.91	15.48	6.96
	NET INCREA	ASE IN BAY	AREA EMI	SSIONS, T	ONS/YEAR
	ROG	NOx	CO	S0x	PM10

	NET INCREA	SE IN BAY	AREA EMIS	SSIONS,	TONS/YEAR
	ROG	NOx	CO	S0x	PM10
ALTERNATIVE A	1.66	38.06	5.44	3.46	0.92
ALTERNATIVE B	0.57	12.48	1.84	0.95	0.30
ALTERNATIVE C	1.83	42.09	6.00	3.86	1.01
ALTERNATIVE D	1.83	42.09	6.00	3.86	1.01

Notes:

ROG = reactive organic compounds NOx = nitrogen oxides CO = carbon monoxide SOx = sulfur oxides PM10 = inhalable particulate matter

TABLE N-59. PORT OF OAKLAND SHIP CALL PROFILE

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Percent of 1991 Vessel Calls	Percent of 2010 Vessel Calls		100% Power Fuel Use (gal/hr)
Container Ships	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	17.8% 37.0% 6.6% 1.9% 0.0%	6.3% 41.1% 12.6% 3.2% 0.0%	30.6 30.6 33.0 35.4	355 486 649 797 960
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	1.2% 7.0% 0.9% 0.0% 0.0%	1.2% 7.0% 0.9% 0.0% 0.0%	30.6 30.6 30.6	789 887 1,008 1,117 1,239
Tankers & Bulk Carriers	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	4.2% 5.9% 0.7% 0.5% 0.0%	4.2% 5.9% 0.7% 0.5% 0.0%	25.8 45.0 49.8 45.0	2,064 4,194 6,857 9,253 11,916
	Steam	0 - 25 25 - 50 50 - 75 75 - 100 100+	0.5% 2.8% 0.9% 1.4% 0.0%	0.5% 2.8% 0.9% 1.4% 0.0%	25.8 37.8 49.8 45.0	789 887 1,008 1,117 1,239
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25 25 - 50 50 - 75 75 - 100 100+	7.0% 1.9% 1.9% 0.0% 0.0%	7.0% 1.9% 1.9% 0.0% 0.0%	53.4 72.6 72.6	355 486 649 797 960

Notes: 1991 vessel call data from California Air Resources Board, 1991. Future vessel tonnage class estimates assume that diesel container ship sizes will increase.

TABLE N-60. EMISSION RATE DATA FOR MARINE VESSELS

	Port of	0ak1and					
Vessel Type	Time In Mode	Average Fuel Use	Emission	Rate, Lbs	per 1,00	0 Gallons	of Fue
and Power Setting	(hours)	Factor	ROG	NOx	CO	S0x	PM10
Steam Boiler Propulsion							
Full Throttle	1.7	80%	1.72	63.6	7.27	318	56.5
Half Throttle	0.4	40%	0.682	55.8	3.45	318	20
One-Third/Slow	0.6	20%	0.682	55.8	3.45	318	20
Hotelling Bunker Fuel Distillate Oil		10% 10%	3.2	36.4 22.2	0 4	318 113.6	10 15
Marine Diesel Propulsion							
Full Throttle	1.7	80%	24	550	61	125.6	33
Half Throttle	0.4	40%	24	550	61	125.6	33
One-Third/Slow	0.6	20%	24	550	61	125.6	33
				on Rate,	Pounds pe	r Hour of	Use
Diesel Generators			ROG	NOx	CO	S0x	PM10
500 kW			0.49	15.43	3.53	1.08	0.36

Notes: Fuel sulfur content assumed to be 2% for bunker fuels, 0.8% for marine diesel and distillate fuels, and 0.2% for diesel generator fuels.

About 80% of steam ship hotelling uses distillate fuels, 20% uses bunker fuels. The typical generator size for marine diesel vessels is 500 kW.

Emission rates for diesel generators based on AP-42, Supplement F, section 3.4.

TABLE N-61. MARINE VESSEL EMISSIONS FOR THE NO ACTION ALTERNATIVE

	Steam	Vessel Tonnage	Annual	Annı	No Act al Bay Ar	ion Alterr ea Emissio		Year
Type of Vessel	or Diesel	(1,000 DWT)	Ship - Calls	ROG	NOx		S0x	PM10
								11120
Container Ships	Diesel	0 - 25	67	1.43	37.27	6.00	6.01	1.65
•		25 - 50	433	11.50	292.05	44.42	50.53	13.76
		50 - 75	133	4.46	111.72	16.38	20.16	5.46
		75 - 100	33	1.32	32.74	4.69	6.05	1.63
		100+	0	0.00	0.00	0.00	0.00	0.00
•	Steam	0 - 25	12	0.07	1.33	0.15	7.18	0.98
		25 - 50	74	0.47	9.22	1.03	49.75	6.82
		50 - 75	10	0.07	1.42	0.16	7.64	1.05
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Tankers &	Diesel	0 - 25	44	3.85	90.68	11.09	19.32	5.12
Bulk Carriers		25 - 50	62	10.91	256.07	30.93	55.07	14.57
		50 - 75	7	1.97	45.98	5.42	10.08	2.66
		75 - 100	5	1.88	43.47	5.03	9.65	2.54
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	5	0.03	0.53	0.06	2.84	0.40
		25 - 50	30	0.22	3.98	0.45	21.65	2.90
		50 - 75	10	0.10	1.66	0.19	9.13	1.18
		75 - 100	15	0.16	2.65	0.30	14.56	1.91
		100+	0	0.00	0.00	0.00	0.00	0.00
General Cargo,	Diesel	0 - 25	74	1.99	54.19	9.60	7.55	2.13
Vehicle Carriers	•	25 - 50	20	0.73	19.97	3.53	2.79	0.79
RO-RO/Lash,		50 - 75	20	0.86	22.91	3.86	3.46	0.96
Ocean Tugs		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Containe			762	19.3	485.8	72.8	147.3	31.4
Bulk Cai			178	19.1	445.0	53.5	142.3	31.3
General	Cargo		114	3.6	97.1	17.0	13.8	3.9
Total			1,054	42.0	1,027.8	143.3	303.4	66.5

TABLE N-62. MARINE VESSEL EMISSIONS FOR ALTERNATIVE A

	•	Vesse1				ernative		
	Steam or	Tonnage (1,000	Annual Ship -	Annı	ual Bay Are	ea Emissio	ons, Tons/	Year
Type of Vessel	Diesel	DWT)	Calls	ROG	NOx	CO	S0x	PM10
Container Ships	Diesel	0 - 25	104	2.22	57.86	9.31	9.33	2.57
•		25 - 50	673	17.87	453.93	69.04	78.54	21.39
		50 - 75	207	6.94	173.89	25.49	31.38	8.50
		75 - 100	52	2.08	51.59	7.39	9.54	2.57
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	19	0.11	2.11	0.24	11.36	1.56
		25 - 50	115	0.73	14.32	1.61	77.31	10.59
		50 - 75	15	0.11	2.12	0.24	11.46	1.57
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Tankers &	Diesel	0 - 25	69	6.04	142.20	17.39	30.30	8.03
Bulk Carriers		25 - 50	96	16.89	396.50	47.90	85.28	22.56
		50 - 75	12	3.38	78.83	9.29	17.27	4.56
		75 - 100 100+	8	3.00 0.00	69.55	8.04	15.44	4.07
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	8	0.04	0.85	0.09	4.55	0.63
		25 - 50	46	0.34	6.10	0.69	33.19	4.44
		50 - 75	15	0.15	2.49	0.28	13.70	1.77
		75 - 100	23	0.24	4.07	0.46	22.33	2.93
		100+	0	0.00	0.00	0.00	0.00	0.00
General Cargo,	Diesel	0 - 25	115	3.10	84.21	14.92	11.74	3.31
Vehicle Carriers,		25 - 50	31	1.14	30.96	5.48	4.32	1.22
RO-RO/Lash,		50 - 75	31	1.34	35.51	5.98	5.36	1.49
Ocean Tugs		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Containe			1,185	30.1	755.8	113.3	228.9	48.8
Bulk Car			277 177	30.1	700.6	84.1	222.1	49.0
General	cargo		177	5.6	150.7	26.4	21.4	6.0
Total			1,639	65.7	1,607.1	223.8	472.4	103.8

TABLE N-63. MARINE VESSEL EMISSIONS FOR ALTERNATIVE B

		Vesse1		Alternative B						
	Steam	Tonnage	Annual	Annu	al Bay Are	ea Emissio	ons, Tons/	Year		
Type of Vessel	or Diesel	(1,000 DWT)	Ship - Calls	ROG	NOx	CO	. S0x	PM10		
Container Ships	Diesel	0 - 25	84	1.80	46.73	7.52	7.54	2 07		
отполно отпро	510001	25 - 50	545	14.47	367.60	55.91	63.60	2.07 17.32		
		50 - 75	168	5.64	141.13	20.69	25.47	6.89		
		75 - 100	42	1.68	41.67	5.97	7.70	2.08		
		100+	0	0.00	0.00	0.00	0.00	0.00		
	Steam	0 - 25	16	0.09	1.77	0.20	9.57	1.31		
		25 - 50	93	0.59	11.58	1.30	62.52	8.57		
		50 - 75	12	0.09	1.70	0.19	9.17	1.26		
		75 - 100	0	0.00	0.00	0.00	0.00	0.00		
		100+	0	0.00	0.00	0.00	0.00	0.00		
Tankers &	Diesel	0 - 25	56	4.90	115.41	14.11	24.59	6.51		
Bulk Carriers		25 - 50	78	13.73	322.16	38.92	69.29	18.33		
		50 - 75	9	2.54	59.12	6.96	12.95	3.42		
		75 - 100	6	2.25	52.16	6.03	11.58	3.05		
		100+	0	0.00	0.00	0.00	0.00	0.00		
	Steam	0 - 25	6	0.03	0.64	0.07	3.41	0.48		
		25 - 50	37	0.27	4.90	0.55	26.70	3.57		
		50 - 75	12	0.12	1.99	0.23	10.96	1.42		
		75 - 100	19	0.20	3.36	0.38	18.44	2.42		
		100+	0	0.00	0.00	0.00	0.00	0.00		
General Cargo,	Diesel	0 - 25	93	2.50	68.10	12.06	9.49	2.68		
/ehicle Carriers, RO-RO/Lash,	•	25 - 50	25	0.92	24.96	4.42	3.49	0.98		
Ocean Tugs		50 - 75 75 - 100	25	1.08	28.64	4.82	4.33	1.20		
ocean rugs		100+	0 0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.Q0 0.00		
Containe	er Ships		960	24.4	612.2	91.8	185.6	39.5		
Bulk Car	riers		223	24.0	559.7	67.3	177.9	39.2		
General	Cargo		143	4.5	121.7	21.3	17.3	4.9		
Total			1,326	52.9	1,293.6	180.3	380.8	83.6		

TABLE N-64. MARINE VESSEL EMISSIONS FOR ALTERNATIVE C

		Vessel		Alternative C					
	Steam	Tonnage	Annual	Annua	al Bay Are	ea Emissic	ns, Tons/	Year	
Type of Vessel	or Diesel	(1,000 DWT)	Ship - Calls	ROG	NOx	CO	. S0x	PM10	
Container Ships	Diesel	0 - 25	108	2.31	60.08	9.66	9.69	2.67	
		25 - 50	700	18.58	472.14	71.81	81.69	22.25	
		50 - 75	215	7.21	180.61	26.47	32.59	8.82	
		75 - 100	54	2.16	53.57	7.68	9.90	2.67	
		100+	0	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	20	0.11	2.22	0.25	11.96	1.64	
		25 - 50	120	0.76	14.95	1.68	80.67	11.05	
		50 - 75	16	0.12	2.26	0.25	12.22	1.68	
		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	
Tankers & Bulk Carriers	Diesel	0 - 25	72	6.30	148.38	18.14	31.62	8.38	
		25 - 50	100	17.60	413.02	49.89	88.83	23.50	
		50 - 75	12	3.38	78.83	9.29	17.27	4.56	
		75 - 100	8	3.00	69.55	8.04	15.44	4.07	
		100+	0	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	8	0.04	0.85	0.09	4.55	0.63	
		25 - 50	48	0.35	6.36	0.72	34.64	4.64	
		50 - 75	16	0.16	2.65	0.30	14.61	1.89	
		75 - 100	24	0.25	4.25	0.48	23.30	3.05	
		100+	0	0.00	0.00	0.00	0.00	0.00	
General Cargo,	Diesel	0 - 25	120	3.23	87.87	15.56	12.25	3.45	
Vehicle Carriers,		25 - 50	32	1.18	31.95	5.65	4.46	1.26	
RO-RO/Lash,		50 - 75	32	1.38	36.66	6.18	5.54	1.54	
Ocean Tugs		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	
						**************************************		· · · · · ·	
Container Ships		1,233	31.3	785.8	117.8	238.7	50.8		
Bulk Carriers General Cargo		288	31.1	723.9	87.0	230.3	50.7		
		184	5.8	156.5	27.4	22.3	6.3		
Total			1,705	68.1	1,666.2	232.2	491.2	107.8	

TABLE N-65. MARINE VESSEL EMISSIONS FOR ALTERNATIVE D

	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Annual Ship - Calls	Alternative D Annual Bay Area Emissions, Tons/Year					
Type of Vessel				ROG	NOx	CO	· S0x	PM1(
Container Ships	Diesel	0 - 25	106	0.07	F0 07	0.40			
container ships	ובשבו	0 - 25 25 - 50	106	2.27	58.97	9.49	9.51	2.62	
		50 - 75	690 212	18.32	465.40	70.79	80.53	21.93	
		75 - 100	53	7.11 2.12	178.09	26.10	32.14	8.70	
		100+	0	0.00	52.58	7.53	9.72	2.62	
		100.	U	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	20	0.11	2.22	0.25	11.96	1.64	
		25 - 50	118	0.75	14.70	1.65	79.32	10.87	
		50 - 75	16	0.12	2.26	0.25	12.22	1.68	
		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	
Tankers & Bulk Carriers	Diesel	0 - 25	71	6.21	146.32	17.89	31.18	8.26	
		25 - 50	98	17.25	404.76	48.90	87.05	23.03	
		50 - 75	12	3.38	78.83	9.29	17.27	4.56	
		75 - 100	8	3.00	69.55	8.04	15.44	4.07	
		100+	0	0.00	0.00	0.00	0.00	0.00	
	Steam	0 - 25	8	0.04	0.85	0.09	4.55	0.63	
		25 - 50	47	0.35	6.23	0.70	33.91	4.54	
		50 - 75	16	0.16	2.65	0.30	14.61	1.89	
		75 - 100	24	0.25	4.25	0.48	23.30	3.05	
		100+	0	0.00	0.00	0.00	0.00	0.00	
General Cargo,	Diesel	0 - 25	118	3.18	86.41	15.30	12.05	3.40	
/ehicle Carriers,		25 - 50	31	1.14	30.96	5.48	4.32	1.22	
RO-RO/Lash,		50 - 75	31	1.34	35.51	5.98	5.36	1.49	
Ocean Tugs		75 - 100	0	0.00	0.00	0.00	0.00	0.00	
		100+	0	0.00	0.00	0.00	0.00	0.00	
Container Ships		1,215	30.8	774.2	116.1	235.4	50.1		
Bulk Carriers General Cargo		284	30.6	713.4	85.7	227.3	50.0		
		180	5.7	152.9	26.8	21.7	6.1		
Total	- -		1,679	67.1	1,640.5	228.5	484.5	106.2	

TABLE N-66. SUMMARY OF MARINE VESSEL EMISSION ESTIMATES

	Annual Ship	Annual Bay Area Emissions, Tons/Year						
Alternative	Calls	ROG	NOx	CO	S0x	PM10		
No Action	1,054	42.0	1,027.8	143.3	303.4	66.5		
Alternative A	1,639	65.7	1,607.1	223.8	472.4	103.8		
Alternative B	1,326	52.9	1,293.6	180.3	380.8	83.6		
Alternative C	1,705	68.1	1,666.2	232.2	491.2	107.8		
Alternative D	1,679	67.1	1,640.5	228.5	484.5	106.2		
		Net Incre	ase in Bay	/ Area Emi	ssions,	Tons/Year		
		ROG	NOx	CO	S0x	PM10		
Alternative A		23.7	579.2	80.5	169.0	37.3		
Alternative B		10.9	265.8	37.1	77.4	17.1		
Alternative C		26.1	638.4	88.9	187.8	41.2		
Alternative D		25.1	612.7	85.2	181.0	39.7		